

Program Audit Report

WASTE MANAGEMENT PROGRAM
DEPT. OF NATURAL RESOURCES
STATE OF MISSOURI

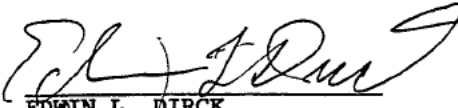
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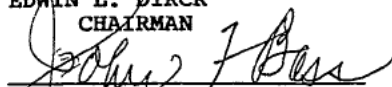


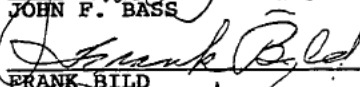
***A report to the Missouri General Assembly
by the Oversight Division of the Joint Committee
on Legislative Research***

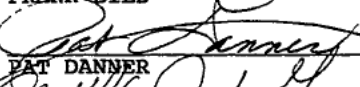
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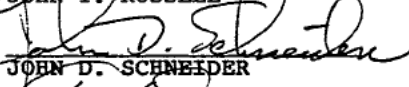

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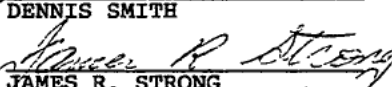

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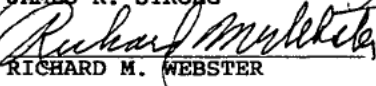

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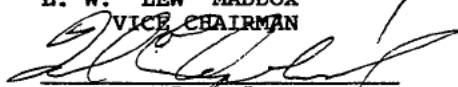

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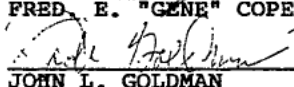

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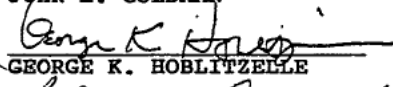

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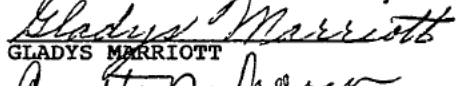
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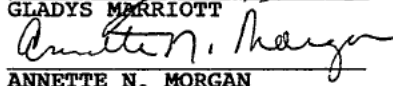

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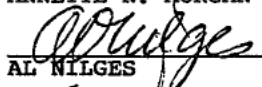

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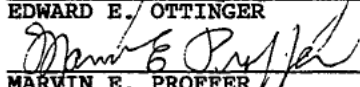

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In accordance with the provisions of RSMo 23.190, the Joint Committee on Legislative Research is pleased to present this limited program audit of Missouri's Waste Management Program, Division of Environmental Quality of the Department of Natural Resources. The audit was conducted by the Oversight Division pursuant to a resolution adopted by the Committee on July 25, 1985.

The report contains findings and recommendations for improving the operations of the Waste Management Program administered by the Department of Natural Resources. The Department's responses to the findings and recommendations have been included in the report.

The Joint Committee on Legislative Research wishes to thank the Legislature for its support in 1985 and urges all members to avail themselves of the services of the Committee whenever the need arises.

Respectfully,

Senator Edwin L. Dirck
Chairman
Committee on Legislative Research

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PREFACE

On July 25, 1985, the Oversight Division of the Joint Committee on Legislative Research was directed by Committee resolution to conduct a management and program audit of the Waste Management Program (WMP) of the Division of Environmental Quality (DEQ) of the Missouri Department of Natural Resources (DNR). A deadline of December 1, 1985 was placed on the audit.

The Oversight Division of the Joint Committee on Legislative Research was created as a result of HB 1087 passed by the 82nd General Assembly in 1984. The Division is responsible for conducting management and program audits of state government agencies.

Management and program audits provide feedback to the legislature and the state agencies on the effectiveness of specific programs. Staff from the Division conduct the audits to determine whether the state agencies are managing and utilizing their resources in an efficient manner and according to legislative intent. The audits evaluate the performance of state agencies to determine whether the objectives of the programs are being achieved and the intended benefits are being realized. The audits may also address whether a program duplicates or conflicts with any other state program. In addition, the Division is assigned the responsibilities of providing fiscal research and analysis on legislation pending before the General Assembly.

On behalf of the Committee and the staff of the Oversight Division, I wish to acknowledge the Department of Natural Resources staff and in particular the staff of the Waste Management Program for their cooperation and assistance in providing much of the information used in this report.

Natalie Tackett

Natalie Tackett

Director, Oversight Division

January 15, 1986

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SUMMARY

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On July 25, 1985, the Oversight Division of the Joint Committee on Legislative Research was directed by Committee resolution to conduct a management and program audit of the Waste Management Program (WMP) of the Division of Environmental Quality (DEQ) of the Missouri Department of Natural Resources (DNR). A deadline of December 1, 1985 was placed on the audit.

The Missouri Department of Natural Resources was created under state reorganization in 1974 and assumed broad responsibilities for programs that assure the wise use of land, air and water resources. The Department is also responsible for the administration of state parks and historic sites. In fiscal year 1985 the department employed approximately 1,026 persons and had a total expenditure of about 60.2 million dollars.

The Oversight subcommittee directed that a preliminary survey be conducted to determine specific areas for evaluation keeping in mind that the scope of the audit would be necessarily limited by time frame and number of personnel available for the program audit.

Based on the results of the survey, the subcommittee prioritized the various possible audit issues and then voted to narrow the scope of the audit to the following basic questions:

How long does it take the Waste Management Program (WMP) to issue permits to waste facility operators?

How closely does WMP's engineering review conform to the rules and regulations governing same?

How frequently does WMP inspect facilities and how thorough are these inspections?

What efforts does WMP make to enforce laws and regulations governing the operation of waste facilities?

Does WMP provide for adequate monitoring of groundwater on and near disposal sites?

Does WMP fulfill requirements of assisting in and approving local government waste management plans as stated in law?

What is the clean-up status of hazardous waste sites?

Does WMP utilize funds as appropriated by the General Assembly?

It is recognized that the areas covered by this evaluation do not include all functions performed within the Waste Management Program nor does the evaluation look at management practices except as they relate to the areas covered.

During the course of the audit, personnel at the department, division, program and section levels of Department of Natural Resources were interviewed. Also interviewed were personnel from the Department of Health and The United States Environmental Protection Agency. Hazardous and solid waste rules and regulations were studied as well as numerous reports. Sixty-six facility files were reviewed. Questionnaires were sent to 55 waste facilities and 119 cities. Oversight staff studied permits in depth with Waste Management Program staff; compiled data from SAM expenditure reports; and performed several other activities as described in the program audit report.

ORGANIZATION OF WASTE MANAGEMENT ACTIVITIES

The regulation of waste disposal is a complex array of programs, laws, regulations, policies and funding mechanisms. The Division of Environmental Quality (DEQ) of the Department of Natural Resources (DNR) is responsible for protecting the public and the environment from pollution problems caused by improper management of solid and hazardous waste. Several programs within DEQ work with waste disposal regulations. Waste management activities are primarily the responsibility of the Waste Management Program (WMP). Laboratory Services monitors contamination from hazardous or solid waste sites and facilities as well as supervises contracts for clean-up projects. The Regional Office Program (ROP) is responsible for inspecting facilities, responding to inquiries and providing technical assistance. Also within DNR, the Division of Geology and Land Survey (DGLS) provides geological information and assessment of waste sites and facilities. The Department of Health provides DNR with information on health related problems concerning waste sites and facilities.

Because of the overlapping of waste management activities, it was necessary during the audit process to also evaluate other programs in addition to the WMP.

FUNDING OF WASTE MANAGEMENT ACTIVITIES

Funding for waste management activities comes from both state and federal governments. These sources include General Revenue (GR), the Hazardous Waste Fund (HWF), the Hazardous Waste Remedial Fund (HWRF), and various federal funds including the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Motor Carriers Safety Assistance Program (MCSAP).

General Revenue appropriations are generally devoted to solid waste activities; although the Laboratory Services Program and Regional Office Program do allocate portions of their General Revenue budget to hazardous waste. The HWF is used to carry out the provisions of the hazardous waste law and for clean-up of hazardous sites designated as emergencies. The HWRF is to be used for activities related to abandoned and uncontrolled hazardous waste sites.

No federal funding is available for solid waste. The RCRA funds are used for implementation of the hazardous waste management program. CERCLA funds are used for the clean-up of hazardous waste sites and preliminary assessment site investigations. The MCSAP program carries out a transporter inspection program and is a federal pass through grant from the Missouri Department of Public Safety to DNR.

U.S. ENVIRONMENTAL PROTECTION AGENCY

The hazardous waste program is continually monitored by the Environmental Protection Agency's (USEPA) regional office in Kansas City. Audits by the federal government occur on an annual basis. The most recent audit reported was conducted in October of 1984. The USEPA was auditing the WMP program during the same period as the Oversight audit. In 1984, the USEPA found some managerial problems; however, overall the program received positive findings. Also, the USEPA seemed impressed with the level of improvement of program operations over the last audit period. The USEPA audit evaluated program resources and administration; the program accomplishments in relation to program commitments and program grants; the extent to which the program adheres to established procedures and policy; and the degree of consistency and uniformity in the application of procedure and policy to specific situations.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

This summary is designed to give a general overview of the major findings and recommendations as a result of the audit. The actual audit report should be consulted for specific information relating to the findings and recommendations contained in this summary.

The limited program audit of the Waste Management Program of the Department of Natural Resources produced the following major conclusions:

PERMITTING

Solid Waste

1. DNR failed to meet their own time frame standard for permitting solid waste facilities 31.5% of the time. DNR's policy is to complete permits within 10 months for applications with one comment letter. The permit process exceeded this standard in eleven of the thirty-five sites permitted in the past 25 months. The time ranged from one month to 28 months. It took an average of 9.86 months to permit a facility from receipt date of complete application to permit issuance.

[[DNR RESPONSE: The Department agrees that the length of the permitting process has been a problem. The Department notes that the addition of 4 FTE in FY 1986 will substantially eliminate the delays which are under the control of the department. Delays may continue to occur because of the poor quality applications or unresponsive applicants.]]

2. It was sometimes difficult to locate final plans since not all engineering plans were stamped "approved". However, the WMP was able to document that each of the requirements of 10 CSR 80.3 and 10 CSR 80.4 were met for the facilities in the sample.

[[DNR RESPONSE: Item #2 of the Findings section stated it was sometimes difficult to locate plans since not all plans were stamped "approved." While it is a recommended in-house procedure to stamp all final plans, this is not mandatory. We are not aware of any situation where the final approved plans could not be located. The department has utilized a new permit format for approximately the last year which includes the identification and listing of all final operation and design plans in the permit text. This should eliminate future confusion with regard to final plans.]]

Hazardous Waste

3. Of the permits reviewed there was no indication that facilities submitted the load bearing capacity of facility access roads as required by state regulations. Oversight staff chose 44 specific requirements of the regulations to test against a sample of actual permits. Other than this exception, the Waste Management Program (WMP) permitting section was thorough in its review of hazardous waste permit applications at least with regard to requirements of state regulations.

[[DNR RESPONSE: Load bearing capacity is presented in the report as an oversight in the review of hazardous waste permit applications. This requirement is important primarily in regard to bridges (which may be underdesigned) and steep embankments or slopes (where excess loads may cause sheer failures). Where these do not exist, the load bearing capacity is at times not specifically addressed in applications, in which case engineering judgement during a site visit may provide adequate information for approval. The report should indicate that engineering judgement was used in lieu of specific figures as is required by regulation. The department will begin requiring specific load bearing capacities in each application and will rely less on engineering judgement.]]

4. A review of half of the permitted hazardous waste facilities indicates that the permitting process has taken much longer than the allowable 180 days. Statutory time restrictions on permitting hazardous waste facilities require that permits be completed in 180 days from receipt of application. Based on the sample it took an average of 367 days to permit hazardous waste facilities.

[[DNR RESPONSE: Delays may continue to occur because of poor quality applications or a lack of response from applicants when further information is sought. In addition new more complicated Federal statutes and rules may further lengthen this process. In light of these facts, the 180 day limit should be revised.]]

Recommendations for Permitting

DNR has been allocated four additional engineers for FY86 which should alleviate the solid waste permit backlog and significantly reduce the time needed to process permits. DNR should reassess its procedures with a view to meeting the statutory guidelines set by the General Assembly.

[[DNR RESPONSE: The Department of Natural Resources has recognized permitting as an area needing significant improvement. To address this need, the new department director appointed a task force on July 11, 1985, to analyze permitting procedures throughout the department. This task force has completed its report, which includes extensive recommendations for standardizing and streamlining the permitting process.]]

INSPECTIONS

Solid Waste Facilities

5. Roughly two thirds of a sample of the solid waste facility files did not contain quarterly inspection reports for at least one of the seven quarters. Regional Office workplans specify that sanitary landfills be inspected quarterly. File reviews of 31 sanitary landfill facilities indicated that 32% were inspected in all of the seven quarters reviewed (1984 & 1985). One facility was not inspected in any of the seven quarters. Seventeen percent of the required inspections were not conducted during the seven quarters reviewed.

[[DNR RESPONSE: DEQ has set a management goal of attempting to inspect each sanitary landfill four times a year (demolition landfills and processing facilities--twice a year). Some facilities may be inspected more frequently if there are compliance problems. Others may be inspected less frequently when other higher priority commitments make demands on limited staff resources. Federally funded RCRA and Superfund activities are given a higher priority because earmarked funds cannot be used for solid waste work whereas general revenue can be used for all program activities. Also, persistent problems with turnover in the regional offices result in low priority work not being performed.]]

6. The Waste Management Program is not always informed as to the status of inspections by the regional offices. The Enforcement Section of WMP could not verify that 8% of the inspections had been made. Oversight Staff determined that a number of inspections occurred but were not logged in the central inspection log.

[[DNR RESPONSE: In FY 1984 and FY 1985, WMP was allocated only one solid waste enforcement position (FTE). Beginning in FY 1986, this allocation was increased to three FTE's. The addition of these new solid waste enforcement personnel should result in correction of this problem by January 1, 1986.]]

7. In working with the solid waste facility inspection checklist and enforcement files it was noted that: more than one permit number appears on some inspection reports and some reports leave the permit number blank; the reports do not specify if a site is closed or open; nor is there any way of knowing whether the report represents a physical inspection of the whole or only a portion of the area permitted.

[[DNR RESPONSE: The increase in solid waste enforcement resources provided in FY 1986 will allow development of much better tracking systems to monitor Regional Office inspections. Also, the Central Regional Office staff has begun work on updating the current solid waste facility inspection form which should correct many of the deficiencies highlighted by the audit.]]

Hazardous Waste Facilities

8. Inspections of permitted hazardous waste facilities were conducted using the interim status checklist rather than using a checklist tailored to the facility which is more appropriate under permitted status. DNR's final authorization application to EPA specifically states that the interim status checklist should not be used for permitted facilities. Permitted hazardous waste facilities are to be inspected based on specific condition of their permit. However, field work disclosed that interim hazardous waste inspection checklists had been used during inspections.

In general hazardous waste facilities have been inspected once per year. The number of inspections will be fewer in FY86 due to USEPA's RCRA implementation plan which specifies hazardous waste facilities (other than land disposal) are to receive inspections once every two years. Fewer inspections will free up resources for additional enforcement efforts; however, program staff expressed concern that one inspection every two years might be insufficient for proper monitoring of hazardous waste facilities.

[[DNR RESPONSE: With the receipt of final authorization, this is no longer a problem.]]

Recommendations for Inspections

The solid waste regional inspection program should be centrally monitored in Jefferson City. A commitment to monitor solid waste inspections for each facility should be made by the Waste Management Program of the Central Regional Office. Regions that fail to submit inspection forms quarterly by site should be so notified by the central office. The content of inspection reports should be closely monitored by the central office to ensure consistent enforcement action.

The filing system for solid waste management should be better organized.

[[DNR RESPONSE: Inspection and enforcement activities are currently under review and the audit recommendations will be considered. Several places throughout the draft audit report indicated the need for an improved file system. The program is aware of this and has taken steps to correct this situation by hiring a full time file clerk to supervise and organize the file system.]]

ENFORCEMENT

Violations

9. No formalized process exists for the WMP to track the resolution of Notices of Violation (NOV). DNR's Inspection and Enforcement Manual indicates that Notices of Violation (NOV) should be issued whenever a violation of law or regulation is determined through inspections. Of 106 inspection report forms from 14 facilities reviewed, 66 contained one or more significant unsatisfactory rating. Of the 66 inspection reports with significant violations only twenty-four NOVs were issued. And of the twenty-four NOVs there was only one abatement order issued by DNR. It was further noted that five facilities had a significant number of unsatisfactory reports (3 - 6) but no NOV's were issued.

Of 22 Notices of Violation, which included both solid and hazardous waste, issued in July and December of 1984, 13 have not been resolved. Four of these are in the process of being resolved through referral to USEPA or through appeals. Seventeen (77%) of the 22 enforcement files had insufficient information to determine if a case had been resolved and resolution could only be determined by locating information in other files or contacting the regional offices.

[[DNR RESPONSE: The lack of solid waste enforcement referrals from the Regional Offices to the Central Office had been related to the very small solid waste enforcement staff support in the Central Office (1 FTE). Due to the FY 1986 expansions granted by the Legislature, these resources have been increased to three FTE's and this should result in the regions being able to make more referrals for Central Office enforcement support.]]

10. Solid waste facilities which have repeated violations are rarely referred to the WMP Enforcement Section. The Inspection and Enforcement Manual advises the regional offices to request DNR enforcement action on or after the second repeat of any significant violation. Using this guideline, enforcement action should have been taken against the operators of all but two facilities in the fourteen facilities sampled. However, only two requests for enforcement action were made and only one administrative order was issued.

Another example of nonenforcement is that a permit was issued to one facility after six notices of violations had been issued for leachate and inadequate ground cover without evidence of satisfactory corrections in the enforcement file. The permit specified conditions that were to be met by 8-31-85. The facility has yet to meet these conditions.

[[DNR RESPONSE: The lack of solid waste enforcement referrals from the Regional Offices to the Central Office had been related to the very small solid waste enforcement staff support in the Central Office (1 FTE). Due to the FY 1986 expansions granted by the Legislature, these resources have been increased to three FTE's and this should result in the regions being able to make more referrals for Central Office enforcement support. With regard to Facility G in Table 2 (A & M Quarries Sanitary Landfill), the two permit conditions have been met, as of November 12, 1985.]]

Groundwater Monitoring

11. DNR does not systematically evaluate the results of groundwater monitoring tests reported to it by waste facilities. As a condition of their permit, 37 disposal facilities are required to have some form of groundwater monitoring. Facilities send the results to the WMP.

There are 118 disposal facilities that are not required to monitor groundwater because their permit was issued prior to the time DNR required monitoring or because monitoring was deemed unnecessary.

[[DNR RESPONSE: DNR did not evaluate monitoring results on a routine basis in FY 1984 and FY 1985 due to staffing levels. Available staff time was devoted to permit review.]]

12. DNR has not routinely taken and tested samples from groundwater monitoring wells to verify facility testing results since July, 1984. Wells are tested only upon special request. Five (26%) of the 19 facilities in the Oversight sample had their wells tested by the state in FY85.

[[DNR RESPONSE: The fact that only 3 of 19 wells were sampled in FY 1985 is due to lack of funding and staffing. Presently, staffing levels have increased so that the lab can sample approximately 10 monitoring wells during FY 1986. DNR did not evaluate monitoring results on a routine basis in FY 1984 and FY 1985 due to staffing levels. Available staff time was devoted to permit review.]]

13. DNR uses minimal control over the testing of groundwater at facilities, therefore DNR engineering staff is reluctant to use groundwater test results. Problems include the physical condition of wells, testing methods and lack of verified historic data on groundwater quality.

[[DNR RESPONSE: The Department has prescribed sampling and testing procedures as part of each facility's permit. Due to lack of staff, data submissions cannot be verified. The FY87 budget requests laboratory staff to perform groundwater monitoring.]]

14. No program exists for evaluating the physical condition of wells or the testing of samples by laboratories. The automated system to monitor testing provides baseline data on background groundwater quality for the facilities that are required to report testing results; however, no verification through testing by the state lab of this data exists.

[[DNR RESPONSE: No program existed in FY 1984 and FY 1985 for evaluating the physical condition of existing wells. The Waste Management Program presently requires all new well installations to be supervised by a registered professional engineer and that "as-built" drawings be submitted upon installation as a means of control over well construction.]]

Recommendations for Enforcement

Enforcement attention to solid waste landfill violations is needed by the central office. DNR should monitor the enforcement activities of the regional offices including updating and maintaining their files. Regional offices should request enforcement action as specified in their manual or the Waste Management Program should initiate enforcement action upon receipt of regional violation reports.

Because of the resources utilized in groundwater monitoring by both the state and private facilities, DNR should use their groundwater monitoring system as it is designed to be used. This should include increased staff time to monitor and follow-up test results, use of personnel to test wells annually and creation of a water quality data base on each facility. Also, sanitary landfills with questionable geology should be required to monitor groundwater.

Much of the procedure for tracking groundwater tests that is now being done by an engineer is clerical in nature. Some of these functions could be assigned to nonprofessional staff.

[[DNR RESPONSE: As indicated previously, the Department's FY 1987 budget request will provide the capability for groundwater monitoring.]]

PLANNING

15. Many local governments have never complied with the law and DNR has done little to compel them to submit a plan or require local governments to update the plans that have been approved. State law requires local governments to submit a plan for solid waste management to DNR for approval. Based upon responses to a questionnaire sent to local governments, some cities are unaware that they are required to have a plan.

[[DNR RESPONSE: Guidelines for development of solid waste management plans, contracts and ordinances were prepared by the department in the early 1970's and have been recently revised (November 1985). These guidelines have been distributed to over 500 local governments. Currently 506 cities and five counties are required to implement solid waste management plans.]]

16. DNR planning efforts and assistance to local governments is limited and insufficient to meet the needs of the state. The WMP has promulgated no regulations which would enforce the statutes relating to local waste management plans. The Central Office Planning Unit has provided direct personnel assistance to only two counties in the last year.

[[DNR RESPONSE: Technical assistance and training was provided to all cities and counties in the early 1970's (written materials, workshops, grant money, personal assistance). In recent years some written materials and limited technical assistance has been possible. The department agrees that more assistance and training is needed. An appropriations request for FY 1987 will request additional funds to accomplish this function.]]

17. According to the Missouri Solid Waste Management Study, 72 of the existing 105 landfills (68%) will be filled to capacity by 1990. There are areas in the state such as in the southern part where geology will make the availability of adequate sanitary landfill sites extremely difficult to locate and permit. The St. Louis area, because of its reliance on landfills in Illinois that are currently under litigation to be shut down, might be particularly vulnerable to a future shortage of waste disposal capacity.

[[DNR RESPONSE: DNR agrees with this finding, and is therefore encouraging the development of the planned resource recovery facility.]]

Recommendation for Planning

The WMP has proposed targeting southern Missouri to receive assistance in planning future waste disposal sites. If no additional resources are allocated for this purpose, it is recommended that DNR adopt this proposal and that DNR begin requesting local plan revisions as time allows. To ensure local governments comply with waste management laws, DNR should enforce the law requiring local governments to plan for adequate disposal capacity and provide additional technical assistance to local governments. The department should update its state solid waste management plan to reflect future waste management needs.

[[DNR RESPONSE: The southern Missouri project is no longer a specifically targeted activity but the area will receive technical assistance as existing resources allow. The department has requested all cities and counties in the state required to implement solid waste plans to review their existing plans and submit plans or updates by February 28 to the department for approval. Detailed guidelines for the preparation of these plans and updates have been provided.]]

STATUS OF HAZARDOUS WASTE SITES

18. The Hazardous Waste Remedial Fund will have insufficient funds to meet the 10 percent match for clean-up of national priority list sites or any other hazardous waste sites in Missouri. The federal government provides 90 percent of the cost for clean-up of sites on the National Priorities List.

The actual cost of site clean-up involving groundwater contamination could be in the tens of millions and DNR estimates that the HWRF will have a deficit of \$736,399 at the end of 1987.

Out of 104 contaminated sites identified, 49 are dioxin sites, three are radioactive waste sites, and the remaining sites contain various other hazardous substances.

Forty-nine sites have been placed on the Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri. Another 23 are being proposed for placement on the Missouri Registry. Six sites* are on the National Priorities List and nine more are proposed for the National Priority List.

Twenty-eight sites have been cleaned up; however, these site clean-ups were relatively inexpensive compared with projected costs for cleaning many of the sites that have not yet been cleaned-up. Fifteen additional sites have been committed for clean-up by DNR or USEPA.

* Missouri Registry regards these six sites as 11 individual sites.

Since 1982 more than \$4.8 million in federal and state funds have been spent by Missouri on analysis and cleanup of hazardous waste sites. More than 97% of the personnel services coded to specific site evaluation and clean-up involved dioxin sites.

[[DNR RESPONSE: The Department agrees that additional funds will be needed in the HWRF by 1988 in order to meet the federal Superfund's ten percent match requirements. Without these additional funds, Missouri risks losing all federal Superfund support in the state. Revenue projections do not include any potential cost recovery.]]

Recommendation for Hazardous Waste Sites

Additional resources should be placed in the Hazardous Waste Remedial Fund to meet the needs of future clean-up. If the fund is not increased, the state could stand to lose substantial federal superfund money. A means to prioritize site clean-up will need to be established.

[[DNR RESPONSE: The Department agrees that additional funds will be needed in the HWRF by 1988 in order to meet the federal Superfund's ten percent match requirements. Without these additional funds, Missouri risks losing all federal Superfund support in the state.]]

APPROPRIATIONS AND STAFFING

Only 14 % of the Waste Management Program staff time was spent on solid waste activities in FY84. The remainder was spent on hazardous waste. In FY85, 23 % of the time was spent on solid waste activities. In FY85 coded personnel time spent on waste management (WMP, Regional Offices, Lab, Division of Geology and Land Survey) totaled 62.3 FTE.

In the process of evaluating the application of appropriations, it was found that the Regional Office Program's staffing plans for FY82-FY86 which allocate personnel to the regional offices does not coincide with the

DNR Budget Requests for FTE to the regional offices in
FY82-FY86.

[[DNR RESPONSE: During none of the fiscal years in question has the Regional Office Program exceeded the "appropriations allotments" identified in the budget. The table below replaces the staffing plan information which was obtained from the Regional Office with actual FTE information.

	REGIONAL OFFICE STAFF by Actual Use and Appropriations (Number of FTE)				
	FY82	FY83	FY84	FY85	FY86
Actual Use:					
Total R.O.P.	93.75	94.92	97.92	101.47	N/A
Appropriations:	100.0	99.0	99.0	101.5	104.5
Difference:	+6.25	+4.08	+1.08	+0.03	N/A]]

FACILITY QUESTIONNAIRE

Fifty-five permitted waste landfills and facilities were sent questionnaires regarding the Waste Management Program. Overall the respondents believed that permit application requirements were understandable and DNR's handling of permit applications was satisfactory. Four of the respondents who rated DNR's permit handling as unsatisfactory thought the permitting process took too long. Eighty-nine percent of the respondents thought DNR's enforcement activities were productive in preventing health hazards. Three respondents complained about illegal landfills and open dumps which hurt their business. Several respondents also commented on the need for siting and permitting new facilities and a need for local planning and zoning of landfills.

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PERMITTING

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SOLID WASTE PERMIT REQUIREMENTS

The Waste Management Program's (WMP) review of a Solid Waste Disposal Area Permit application concentrates on the environmental issues of groundwater and surface water protection, generation and control of methane gas, air quality, procedures and general aesthetics of the site.

Statutory Authority

RSMo Chapter 260 requires every person desiring to operate a solid waste processing or disposal facility to be permitted by Department of Natural Resources (DNR). It requires DNR to investigate the proposed area and determine whether it complies with the law.

It gives specific authority to DNR to promulgate and adopt rules and regulations to carry out the purposes of sections 260.200 to 260.245.

Regulatory Authority

Title 10--Missouri Department of Natural Resources
Division 80--Solid Waste Management Program
Chapter 3--Sanitary Landfill
Chapter 4--Demolition Landfill
Chapter 5--Processing Facility

The above rules and regulations which are currently in effect detail both the requirements and the methods of

satisfactory compliance to ensure that the design, construction and operation of landfills and processing facilities will protect the public health, prevent nuisances and meet applicable environmental standards. The requirements specified therein delineate minimum levels of performance necessary for any landfill/processing facility.

The major requirements as specified in the rules and regulations are listed on the DNR engineers' technical checksheet. (see Appendix A)

Methodology

The Sanitary Landfill Plan Review Checksheet used by the review engineers (Appendix A) was compared to the 10 CSR 80-3 to ensure that the checklist includes requirements found in the regulations. Three sanitary landfills and one demolition landfill were selected to undergo scrutiny in order to verify that back-up data exists in the file to support a DNR engineering decision to approve or deny permitting.

The four facilities selected for this review were chosen as follows:

- 1) Three of the four were selected from a group permitted in 1984 or 1985 which took a longer than average time to complete the permit review process.
- 2) One of the files represents an application still pending which has taken longer than the average length of time to complete the permit process.
- 3) The four facilities were chosen to ensure that each of the three permit engineers' work was represented. There were three engineers utilized by WMP to review solid waste applications in 1984 and 1985.

The three permit sanitary waste engineers along with Oversight auditors recreated the approval process they used before recommending that the DNR's director grant a solid waste landfill permit to the respective facilities.

Findings

- The Sanitary Landfill Plan Review Check Sheet used by DNR substantially represents all the requirements specified in 10 CSR 80.3. The rules and regulations cited on the check sheets, however, are not the current ones. Also, no such engineering check sheet exists for demolition landfills.
- A file review of four solid waste facilities with a DNR project engineer revealed evidence attesting that each of the 14 requirements to be met in 10 CSR 80.3 or 10 CSR 80.4 were contained in the DNR files. The DNR permit engineers showed the auditors step-by-step what they received from the consulting engineer that ultimately satisfied the DNR engineer and allowed him or her to check off each requirement as "approved".
- Not all final engineering plans were stamped "approved" after being officially approved by DNR. Consequently, it is difficult to locate some of the approved requirement submittals in the file. Typically, there are numerous revisions and revised specifications in letters to and from DNR to consulting engineers. Seldom did one revised final plan document representing a complete and final synthesis exist in the file.
- The permit section and the enforcement section combine their solid waste facility files into one file. The files were unorganized and cumbersome for our purposes.

Recommendations

- A final DNR "approval" stamp should be applied to each specific plan requirement finally met. Perhaps the easiest way to accomplish a readily accessible "approved" document plan is to require the applicant's engineer to furnish such a final plan to DNR after all requirements have been agreed to. DNR is requesting this of the consulting engineer in some cases at this time.

- The solid waste file system for permit and enforcement should be refined. There are numerous systems available; however, all that is probably required is the dedication of manpower to create a unique system fitting DNR's needs for retrieval, efficiency and control.

LENGTH OF SOLID WASTE PERMIT PROCESS

There are numerous steps to take before a solid waste facility application can be approved by the Department of Natural Resources (DNR). The steps generally are:

1. A preliminary site investigation report is usually requested by the applicant. (This is a recommended step but is not required.)
2. The applicant must then submit an application for an operating permit, which includes a Missouri licensed professional engineer's plans, specifications, and operating procedures, support data and other relevant data as may be necessary to comply with the rules and regulations of the department.
3. The application is briefly reviewed by DNR for completeness. If it is complete, then proceed to step 4.
4. A news release concerning the proposed site is issued inviting written comments to DNR from the public usually within a four week period.
5. After the comment period is closed, DNR's technical review of the plans for compliance with the department's rules and regulations by one of its engineers may begin. Numerous pieces of correspondence and meetings may be necessary within this process to resolve any unclear, unprovided or controversial design specifications in order to ensure adequate protection of the environment.
6. After the DNR Waste Management Program (WMP) engineer is satisfied that the application meets DNR's rules and regulations, a permit letter is drafted and sent through channels to the director of the department for signature approval.

Statutory

RSMo 260 (the solid waste management law) is silent on how long it must take to issue a Solid Waste Disposal permit.

Rules and Regulations

10 CSR 80, which is the DNR's Solid Waste Management Program rules and regulations, is silent on the question of how long it shall take to issue a Solid Waste Disposal permit.

Written Policy

DNR's Waste Management Program's "Application for Operating Permit Review Process" states that the time it may take to issue a Solid Waste permit is 16 weeks minimum to 41 weeks maximum when only one engineering review comment letter is written.

This same written document gives a breakdown of the time lapse for the review process (see Table 1). DNR's estimates include lag due to workload.

Table 1

TOTAL TIME LAPSE FOR REVIEW PROCESS

<u>TIME LAPSE FROM</u>	<u>MINIMUM</u>	<u>MAXIMUM</u>
Completeness Review	1 week	2 weeks
Issuance of News Release	1 week	1 week
Public Comment Period	4 weeks	4 weeks
WMP Lag Due to Workload	5 weeks	13 weeks
Technical Review	1 weeks	3 weeks
Consultant Response to Review Comments	2 weeks	8-12 weeks
WMP Lag Due to Present Projects	2 weeks	4 weeks
Review of Addendums	1 week	1 week
Approval by Department Director	2 weeks	4 weeks
	=====	=====
Totals	16 weeks*	37-41 weeks*

*Note: Each additional review comment letter by WMP will
add 4 to 8 weeks to the total time frame.

Methodology

From the list of the solid waste facilities permitted in the last 25 months, the average length of elapsed time between application and final determination was calculated. The files of two pending permit applications were then reviewed as well as the files of the 11 permitted facilities whose permitting had taken longer than the maximum time DNR's statement said it should take to get a permit. The Oversight file review consisted of a comparison of the dates of each transaction during the permit process to the DNR "Time Lapse Chart" (see above under Written Policy). From this, Oversight staff was able to ascertain where and why delays occurred (see Table 2).

Additionally, the dates recorded on the monthly status reports were checked against the actual documents in the file to determine the veracity of the monthly status report.

Findings

- Thirty-five solid waste facilities were permitted by DNR within the last 25 months (8/83--8/85).
- The average elapsed time from the date a complete application was received by DNR to the date of permit issuance by DNR for these 35 solid waste facilities was 9.86 months. The time ranged from a minimum of one month (for a simple change of ownership transaction) to 28 months.
- Of the 35 solid waste facilities permitted in the last 25 months, 18 (51%) were issued to sanitary landfills. The remainder were issued to demolition landfills and processing facilities. The 18 sanitary landfill permits took an average of 10.38 months to be issued.

- Eleven of the 35 sites permitted in the last 25 months fell outside of the time constraints DNR placed upon itself; that is, it took longer than ten months to issue a permit with one comment letter (see above under Written Policy). These 11 permitted facilities and two facilities with permits pending were reviewed in detail to determine the causes for delays in the permit process. A case by case analysis can be found in Table 2.
- Of the 11 permitted facilities taking longer to permit than DNR's time constraints specified (10 months when only one engineering comment letter is issued), eight were delayed primarily due to permit backlogs. One of the two facilities reviewed which have permits pending also has been delayed primarily for this reason.
- File review revealed that it is not uncommon for an applicant to begin a dialogue with DNR regarding a potential permit long before a completed application is filed with DNR. This may lead to a perception of the permitting process taking a very long time. However, DNR's permit process actually begins only after it accepts, as substantially complete, a given application.
- Of special interest was one sanitary landfill which received a WMP preliminary site investigation in December of 1981 but has yet to be permitted. It should be noted that this case was not typical of any other file reviewed. A complete application was not accepted by WMP until 4/29/83. There have been numerous and varied delays from the beginning. From January 15, 1985, to date, however, the delays can generally be attributed to a very cautious approach by DNR due to the involvement of citizen's groups, the appointment of a new director to the department and the use of staff for other activities.

Table 2
REVIEW OF PERMIT PROCESS FOR 13 SOLID WASTE FACILITIES

Facility Code	Date DNR Received Application	Date Permit Issued by DNR	Total Time Lapse	Reasons for Delays *
A	12/20/82	3/8/84	14 months	1 1/2 months delay due to public hearing. 6 1/2 months delay due to permit review work backlogs.
B	9/22/82	9/17/84	24 months	6 1/2 months passed with no action by DNR after NRC gave its approval to permit. Reason for this delay is unknown. 11 months delay occurred when the entire site was put on the state registry as an uncontrolled site. What occurred during this period is unknown.
C	3/16/83	9/20/84	18 months	6 months delay due to work backlogs.
D	5/19/83	12/14/84	19 months	8 months delay was primarily due to work backlogs.
E	1/4/84	2/25/85	13 months	2 month delay due to work backlogs.
F	2/16/84	3/7/85	13 months	3 months delay due to DNR backlogs; 3 month delay due to lack of response to DNR's comment letter from the applicant's engineer. (DNR's engineer had to remind them to respond).
G	3/21/83	7/31/85	28 months	2 months delay due to backlog. 12 months allowed by DNR for an engineering study on expansion. 14 months delay for enforcement action.

*Note: Number of months shown here are a total figure and not necessarily one delay period.

Table 2 (continued)
 REVIEW OF PERMIT PROCESS FOR 13 SOLID WASTE FACILITIES

Facility Code	Date DNR Received Application	Date Permit Issued by DNR	Total Time Lapse	Reasons for Delays*
H	3/19/84	8/19/85	17 months	8 1/2 months delay due to work backlogs.
I	1/26/84	8/1/85	19 months	5 months delay due to work backlogs.
J	3/9/84	6/12/85	15 months	6 1/2 months delay due to work backlogs.
K	2/10/84	3/1/85	13 months	3 months can probably be attributed to the large size of the site and complexity of the design required to compensate for poor geology.
L	6/28/84	Permit not issued as of 11/85	16 months	4 months delay due to work backlogs. An additional delay may be as a result of this permit being reassigned to a newly hired DNR permit engineer in mid 1985.
M	4/29/83	Not issued as of 11/15/85	30 months	Time delays between 4/29/83 and 1/15/85 were primarily due to factors outside WMP's control. After January 15, 1985 the delays seem to be due to a generally slow and cautious approach by DNR caused by: 1) appointment of a new director 2) continued tactics of a citizen's group opposing the permit 3) DNR placing a higher priority on special projects, hiring and training new engineers, working on various other support activities than it placed on processing this permit application.

* Note: Number of months shown here are a total figure and not necessarily one delay period.
 Source: WMP Facility Permit Files

- The dates recorded by facility in the DNR monthly status report log of solid waste permits pending, are reliable. These dates in the monthly status report are skeletal dates. The files contain numerous other dated documents that assist in obtaining a significantly deeper and fuller understanding of each applicant's permit status.
- The technical engineer review process rarely includes an actual on-site tour by the DNR permitting engineer.
- The DNR engineers require that all technical review issues be put in writing and placed in the facility file. However, this practice has elongated the permit process in those cases where a consulting engineer does not readily comply.
- DNR has not always taken strong stands against solid waste landfill violators when no alternative site was readily available and no complaints were being lodged. Facility "G" on Table 2 is a case in point. DNR allowed this landfill to operate for a period of 30 months in violation of RSMo 260.205.5 which specifies that landfill permits are non-transferable. During this time eight inspections were performed resulting in six NOV's being issued for leachate and inadequate cover problems. (These problems have continued to recur since the site was first open.) The last NOV was issued 4-25-85. Nonetheless the permit was issued without evidence of satisfactory corrective action in the enforcement file. The permit specified two conditions that were to be met by 8-31-85. As of the writing of this report, these conditions have not been met.
- Backlogs of solid waste permit applications were constant during the last 25 months. The Permit Section of WMP was assigned 3.25 FTE engineers during this time period. However, according to the Permit Section Chief, support activities consumed 1.1 FTE leaving approximately 2 FTE to review permit applications.

Also contributing to the permit backlogs in this time period were three staffing problems:

- One of the engineers was hired and trained during part of this time. His productivity was, admittedly, slower at the beginning of his tenure.
 - Another of the engineers took a leave of absence for three and one half months beginning 1985 and was not replaced.
 - At the beginning of 1985 all solid waste engineers were used full-time to write a comprehensive status report on solid waste facilities in Missouri. This special solid waste study took six weeks to write. It should be noted that this report has not yet been released by DNR.
- The FY 1986 budget allocated an additional four FTE engineers in the solid waste permits section. All four of the positions have been filled.

Recommendations

- No specific recommendations have been given as the solid waste permit backlog problem is in the process of being solved by the addition of four FTE engineers to the Waste Management Program budget for FY 1986.

HAZARDOUS WASTE PERMIT REQUIREMENTS

Permitting hazardous waste facilities is a primary function of the Division of Environmental Quality. All facilities which treat, store or dispose of hazardous waste are required to obtain a permit to operate the facility. The permit application must detail how the facility plans to comply with the requirements of state regulations. In reviewing the application the Division is responsible for determining whether the application has addressed each requirement of the permitting regulations. Currently there are 75 treatment, storage or disposal facilities (TSD facilities) in Missouri. Of those ten have been permitted; twenty-five have their applications under review; nine have applied for closure; and five have been notified their applications are due by November 8, 1985. The remaining 26 facilities have not yet been given a due date to submit their completed applications (part B applications). All facilities that have not been granted a permit are operating under an "interim status" until their applications can be reviewed.

Statutory Authority

General requirements for permitting hazardous waste facilities are addressed in Chapter 260 RSMo.

Regulatory Authority

CSR 10.25-7 states the criteria to be included in a hazardous waste permit.

Written Policy

The program description of DNR's application for final authorization of the State Hazardous Waste Management Program describes specific policy for permitting hazardous waste facilities.

Methodology

To determine whether the Division ensures that facilities address the requirements of state regulations and state law the Oversight staff developed a checklist of requirements found in the regulations. This checklist was developed independently from the completeness checklist used by DNR. The checklist included 44 separate items that are to be addressed by facilities wishing to be permitted (see Appendix B). Of the ten permitted facilities, three were chosen (one treatment, one storage, and one disposal facility) for a file review to determine whether the applications contained the information on the checklist.

The file review was intended to determine whether each item on the checklist had been addressed. It should be noted that due to the complexity of many of the engineering issues the auditors could not determine whether each specific item had been handled in the best possible manner.

Findings

- There was one requirement in the regulations that was not included in any of the three applications that were reviewed. State regulations, 10 CSR 25-7.011 General Rules Applicable to all Hazardous Waste Facilities, require that the permit include a description of the load bearing capacity for access roads. In the three permits reviewed there was no indication that the facilities submitted the load bearing capacity of the access roads as required by state regulations.
- Other than the load bearing requirement, the waste management program staff engineers checked each application for information required by state statutes. A completeness checklist is used by DNR to ensure that the regulations have been satisfied and the checklist had been used on the three applications reviewed.

Recommendations

- Since state regulations require that the load bearing capacity be included in the application, DNR should ensure that no application is approved without this issue being addressed.

LENGTH OF HAZARDOUS WASTE PERMIT PROCESS

Currently there are 75 hazardous waste treatment, storage and disposal facilities operating in Missouri. Through November 1985 DNR had issued permits to 10 facilities. There are several major steps that must be completed before a facility may be permitted. Upon receipt of the application DNR determines whether the application is complete and notifies the applicant of deficiencies. When the application is deemed complete, the public participation process and technical review process begins. State law requires that DNR either permit or deny the application within one hundred eighty days of receiving it (RSMo 260.395.9). In addition section 212 of the 1984 RCRA amendments requires all facilities to receive final permits by 1992.

Statutory Authority

RSMo Chapter 260.395.9 requires DNR to permit or deny a permit within 180 days of receiving it.

Regulatory Authority

Title 10, Missouri Department of Natural Resources, Division 25, Chapter 8, references the time schedule for completion of facility permits.

Methodology

Five of the ten permitted sites were reviewed to determine if applications are being processed in the time frames allotted. For the five facilities the dates reviewed include:

- 1) date application was received
- 2) date application completed for public participation purposes
- 3) date public notice issued
- 4) date of issuance of the draft permit
- 5) date of the close of the public comment
- 6) date of permit issuance

Actual completion dates were tested against specified time constraints.

Findings

- Of the five facilities reviewed (see Table 3) the number of days taken to permit a facility from receipt of a complete application to issuance of a permit averaged 367 days. State law requires that this process take no longer than 180 days (RSMo 360.395.9). The amount of time to review applications varied from 99 days to 827 days. The amount of time to complete the review process is dependent on the 1) type of facility, 2) quality of information submitted by the facility, 3) priorities of DNR, and 4) extraneous factors such as staff turnover and adapting to new regulations.
- To date, of the approximately 75 hazardous waste facilities in Missouri, there have been ten final permits issued. Section 212 of the 1984 RCRA amendments requires all facilities to receive final permits by 1992--certain types of facilities are required to be permitted earlier. DNR has developed a "Multiyear Hazardous Waste Permits Strategy" that addresses the deadlines required by the 1984 RCRA

Table 3
HAZARDOUS WASTE FACILITY DATES FOR COMPLETION
OF PERMIT REVIEW

Permitted Site	Type of Facility	Received Application	Determined Application Complete	Issue Public Notice	Issue Draft Permit	Closed Public Comment Period	Permit Issued	Comments
Case 1	Landfill	12/30/81	1/11/82	8/25/82	No Draft Permit	10/15/82	12/22/82	12/30/81 Application was a revision of several earlier submittals. At this time, DNR did not need to issue draft permit, etc.
Case 2	Storage	8/19/82	8/27/82	8/27/82	EPA Draft Permit 1/19/82	End of EPA Public Comment Period 3/9/83	3/24/83	No DNR draft permit was required at this time
Case 3	Incinerator	12/21/82	1/21/83	2/3/83	9/30/83	12/7/83	1/13/84	
Case 4	Incinerator	6/11/84	7/6/84	8/20/84	8/21/84	10/5/84	10/19/84	
Case 5	Storage	10/27/82	11/23/82	12/8/82	5/25/84	7/17/84	2/28/85	

Source: DNR Permitting Files

amendments. The strategy plans for the completion of all post closure permits by the deadline of November 8, 1988 however, this plan is characterized in the report as being optimistic. Program staff expressed that it is unlikely that all post closure permits will be issued as scheduled due to manpower shortages.

Recommendations

- DNR should reassess its procedures with a view to meeting the statutory guidelines set by the General Assembly.

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INSPECTIONS

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FREQUENCY OF SOLID WASTE FACILITY INSPECTIONS

It is the responsibility of DNR's six regional office staffs to perform the required field inspections and investigations and to secure improvements and elimination of deficiencies in solid waste facilities.

Statutory Authority

RSMo 260 gives authority to conduct inspections but does not specify the frequency of inspections.

Regulatory Authority

10 CSR 80-1.010(2) specifies that one of DNR's functions is to conduct investigations of solid waste management systems; however, the frequency of inspections is not specified anywhere in the solid waste rules and regulations.

Written Policy

DNR's Division of Environmental Quality's Inspection and Enforcement Manual (December 1984) page 6.4 states:

"At least 4 inspections shall be conducted annually of each permitted sanitary landfill. Other permitted facilities (demolition landfills and processing facilities) should be inspected twice per year. Additional inspections shall be made as appropriate to eliminate unsatisfactory features and to secure the necessary improvements."

FY 1984, 1985, and 1986 Regional Office Workplans specify that the minimum of four inspections required for each sanitary landfill will be conducted quarterly.

Methodology

Five or six permitted sanitary landfills were chosen in each of the six regions to determine the dates of inspection in calendar years 1984 and 1985. A total of 31 sites out of 111 sanitary landfills were evaluated. This represents approximately 28% of the existing sanitary landfills.

Fourteen of the site files located in the Enforcement Section of the WMP in Jefferson City, were reviewed to actually see the inspection forms in the files. The solid waste inspection log also located in the Enforcement Section was compared against the files. The inspection dates for 1984 and 1985 on the additional 17 sites were furnished by WMP to us with their sources noted.

All the inspection dates in 1984 and 1985 for these 31 sites were compared against DNR's stated policy in their Inspection Enforcement Manual and regional workplans.

Findings

- Of the thirty-one (31) sanitary landfill facilities selected for review for adherence to the minimum four quarterly inspections per year (four quarters in 1984 and three quarters in 1985 to date), the following was found:

10 (32%) of the facilities met or exceeded the standard.

13 (42%) of the facilities were NOT inspected in one of the required quarters.*

5 (16%) of the facilities were NOT inspected in two of the required quarters.*

2 (7%) of the facilities were NOT inspected in three of the required quarters.*

1 (3%) of the facilities was NOT inspected in seven of the required quarters.*

Table 4 provides data on missing inspections by facility.

- The Oversight staff study of 31 facilities revealed that 17% of the required quarterly inspections were NOT conducted in 1984 through the 3rd quarter of 1985.

*One of the missing quarters for six of those thirty-one sites fall exclusively into the third quarter of 1985. Even though WMP's Inspection Manual requires the distribution of reports within the 30 days following, it is possible that some of these were inspected late in the third quarter but the report form was not yet received in Jefferson City. The remainder of the missing quarterly inspections fell equally among the other six quarters with no particular pattern evident.

Table 4
 ACTUAL INSPECTIONS CONDUCTED OF CERTAIN SANITARY LANDFILLS
 IN 7 QUARTERS OF 1984 AND 1985

Oversight Facility Code	Total No. Inspections Conducted 7 Qtrs. 84-85	No. of Qtrly. Inspections NOT Conducted	Inspections Made But No Checklist in Enforcement File		
				WMP Found Copies Later	Reg. Office Will Send
A	6	1 (3rd qtr. 85)	3	3	NA
B	7	1 (1st qtr. 84)	3	1	2
C	5	2 (1st qtr. 84 2nd qtr. 84)	2	2	NA
D	5	2 (1st qtr. 84 2nd qtr. 84)	2	0	2
E	7	1 (3rd qtr. 85)	1	0	1
F	9	0	1	0	1
G	1	2 (1st qtr. 84 2nd qtr. 84)	0	NA	NA
H	15	0	4	3	1
I	9	0	2	2	NA
J	8	0	2	2	NA
K	13	0	1	1	NA
L	9	0	1	0	1
M	6	1 (2nd qtr. 85)	1	1	NA
N	6	1 (3rd qtr. 85)	0	NA	NA
Subtotals for above 14 Sites Reviewed In-Depth	106	11	23	15	8
O	7	1 (2nd qtr. 84)			
P	4	3 (4th qtr. 84; 1st qtr. 85; 3rd qtr. 85)			
Q	6	3 (3rd qtr. 84; 1st qtr. 85; 3rd qtr. 85)			
R	7	1 (3rd qtr. 85)			
S	6	1 (2nd qtr. 85)			
T	7	1 (1st qtr. 85)			
U	5	2 (4th qtr. 84; 2nd qtr. 85)			
V	7	0			
W	6	1 (2nd qtr. 85)			
X	6	1 (3rd qtr. 85)			
Y	7	0			
Z	7	0			
AA	5	0			
BB	7	1 (2nd qtr. 85)			
CC	0	7 (all qtrs.)			
DD	6	1 (3rd qtr. 85)			
EE	6	2 (1st qtr. 85; 3rd qtr. 85)			
Subtotals for additional 17	99	25			
Totals	205	36			

Total Number
 Required Inspections 217

Source: Waste Management Program Enforcement Section

- Twenty-two percent (22%) of the inspection forms were not in the appropriate enforcement file when the Oversight staff reviewed 14 of the 31 files. However, 15 of the forms were supplied later presumably located in the Jefferson City office but not in the file. Eight of the inspection forms could not be located in Jefferson City at all and the regional offices have stated they would send them to the Enforcement Section. Therefore, 8% of the inspections could not be verified in the Enforcement Section of WMP.
- Also an indeterminate but probably large number of inspections actually occurred but were not logged in the WMP Inspection Log because the inspector did not submit the inspection information on an inspection form but, rather wrote a narrative description. It is WMP's practice to only log inspections recorded on official Surveillance Record forms.
- WMP keeps a NOV log as well as an inspection log. Presumably a physical inspection precipitates the issuance of NOV's; however, the two logs do not necessarily correlate. This is generally due to the practice of making an entry in the inspection log only from Surveillance Record forms.

During the review process, the following findings were noted:

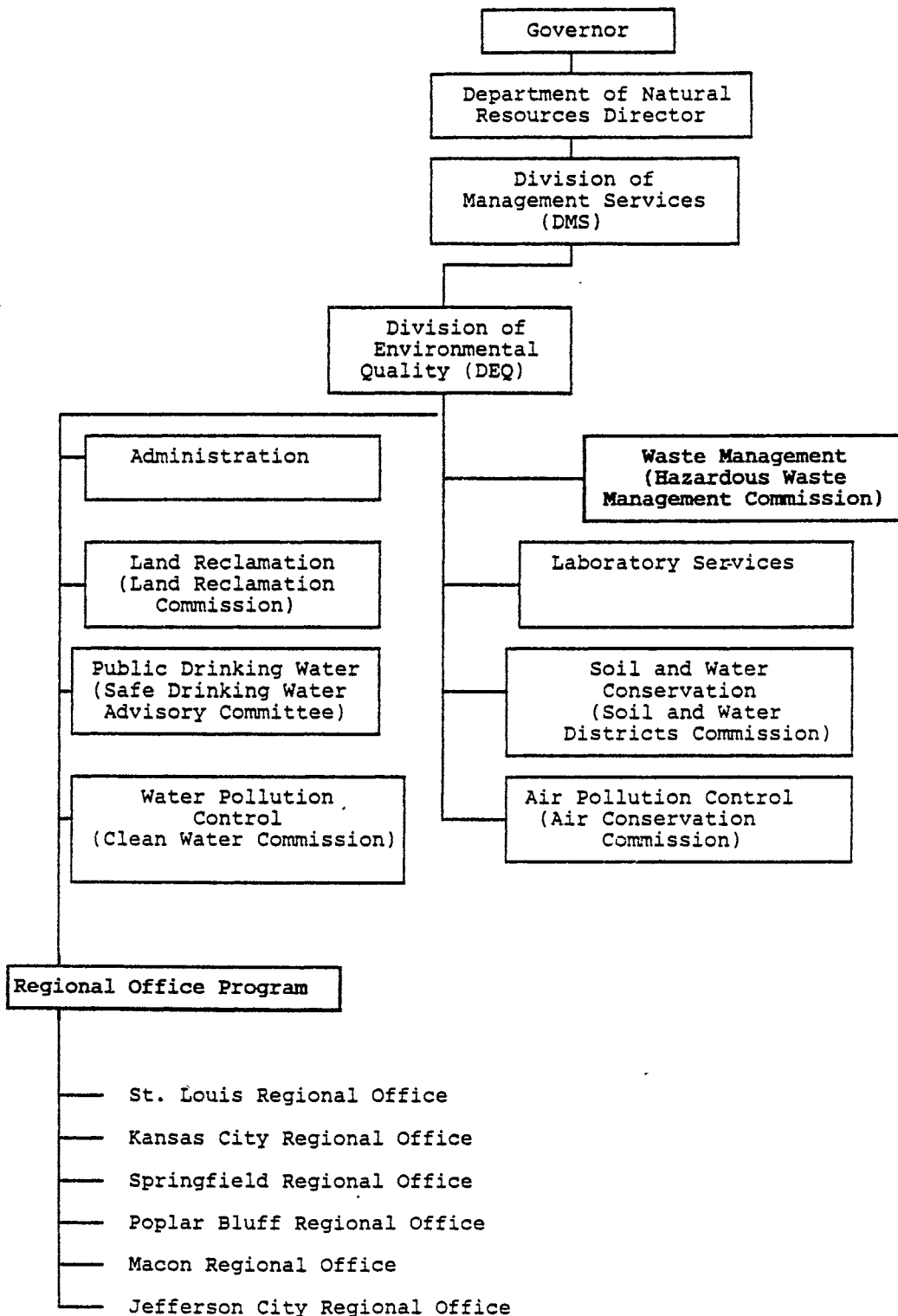
- The number of permits do not match the number of active solid waste facilities. Some contiguous sites have multiple active permits. Also, permits are issued without regard for when a given facility will need to begin operation.
- The auditors could not determine from the enforcement files reviewed whether a given inspection was conducted on an open or closed site. DNR policy dictates a final closure inspection be performed including assurances that the plat is filed with the county recorder of deeds. Furthermore,

DNR policy requires each closed disposal area to be inspected annually for the first five years after closure and at least once every three years thereafter.

- More than one permit number appears on some inspection reports. Some inspection reports leave the permit number blank.
- No description of the site is contained on the Inspection Checksheet form used by all inspectors. Thus, it is difficult or impossible to know what was actually inspected. This is particularly significant when more than one permit number appears on one checklist form.

- The present organizational structure separates the Regional Office Program from the Waste Management Program and places each under a different director:

Illustration 1



- The Director of the Regional Office Program does not receive copies of inspection reports on a routine basis. These reports are sent directly to the WMP's Enforcement Unit.
- FY 1986 budget appropriations added nine FTE to the WMP staff. Two FTE (one environmental engineer and one environmental specialist) are to be added to the Enforcement Section in Jefferson City.

Recommendations

- The solid waste regional inspection program should be monitored by DNR management personnel in Jefferson City. Some specific commitment to monitor inspections for each site should be made by DNR. At this time there appears to be a reticence on the part of WMP to monitor another program's workers. Organizationally it is awkward to expect WMP to be responsible for finding deficiencies or strengths in a work staff over which it has no supervisory authority.
- Two suggested alternative remedies to this problem are:
 - Require all inspection forms to be sent to the director of the Regional Program. That staff, then, would have the "site specific" tools to monitor its own subordinates and issue whatever directives are appropriate to achieve compliance with its standards.
 - A second approach could be to reorganize. A decentralization of the regional program would transfer the appropriate number of FTE to the WMP. This would give the relevant manager full responsibility and authority over persons performing work for the WMP. The permitting and inspecting functions would thus be tied closer together therefore optimizing the potential for control over the whole WMP function.

- Time should be devoted to ensuring a more organized filing system. A better system for ensuring that the central office WMP is informed in a timely manner of the closing of any solid waste facility and retirement of that permit number is needed. Regions should be given credit by WMP for inspections in addition to those recorded on a specific form. There should be timely follow-up with any region that does not send in an inspection report on each site in any given quarter.
- A system for controlling permit numbers is needed. An organized numbering system representing various categories should be vigorously enforced and computerized. This would allow for the quick retrieval of a variety of statistics in this area. Permit numbers now are not controlled and are manually purged when time allows.
- There should be only one permit number reflected per Inspection Form.
- There should be some data required on every inspection form that would tell the reader what part of the site was actually inspected.
- Closure inspections need to be recorded in such a way as to easily distinguish them from routine/periodic inspections. The central office should timely retire closed permit numbers and should clearly designate such in the facility file.
- The permit application could ask "what is the estimated date for opening this potential new site?" Coordination with the regional inspector or site visit by the permit engineer should corroborate this estimated date. This would discourage the issuance of permits long before a facility opens and insure better control over permits.

- Any system developed to monitor inspections should include a date of initiating operations at a given facility. Regional offices should keep WMP advised quarterly of the status of each permitted facility. This could include the issuance of an inspection report indicating a facility has not yet begun operating.
- Although DNR has latitude to determine the minimum number of required inspections and has established quarterly intervals as a standard in 1984, 1985 and 1986, it is recommended that no fewer than quarterly inspections be conducted per facility. Monthly inspections of solid waste facilities, as recommended by the Solid Waste Advisory Committee report of February 1985, would be preferable.

SOLID WASTE INSPECTION CRITERIA

Regional office personnel are responsible for making routine inspections of all solid waste processing and disposal facilities. The purpose of these inspections is to maintain surveillance of the operation, to eliminate unsatisfactory features, and to secure improvements of the operation.

Inspections are to be conducted to determine whether the facility is being maintained in compliance with the "Operations" subsection of the "Missouri Solid Waste Rules and Regulations" and is constructed and operated in accordance with the approved engineering plans, specifications and operating procedures.

Statutory Authority

The Missouri Solid Waste Management law (RSMo 260.225 (7)) gives authority to DNR to conduct inspections but does not specify criteria to be met.

Regulatory Authority

10 CSR 80 chapters 3, 4, and 5 describe in detail what the satisfactory compliance factors are for sanitary landfills, demolition landfills and processing facilities respectively.

Examination of Section IV of DNR's Surveillance Record (inspection checklist) forms E 1505A-1176 1505B-4/79 and 1505C-1176, reveals the regulatory compliance factors and proper citation of the rule. Part IV of the Sanitary Landfill Surveillance Record is shown as Illustration 2:

Illustration 2

IV. Satisfactory Compliance Subsections Regulations 80-3.010

Check all subsections: SAT — Satisfactory; UNS — Unsatisfactory. (If necessary describe "UNS" violations under "Remarks.")

SUBSECTION NUMBER	SATISFACTORY COMPLIANCE OPERATING PROCEDURE	SAT	UNS
(8) SOLID WASTE ACCEPTED			
(8)(C)2	Bulky solid waste crushed on solid ground and pushed onto working face near bottom of the cell.		
(8)(C)3	Small dead animals covered immediately with soil or solid waste. Large dead animals placed in pit and covered with four feet compacted soil.		
(8)(C)4	Disposal of dewatered sludges on working face along with municipal solid waste.		
(8)(C)5	Incinerator and air pollution control residues prevented from becoming airborne.		
(3) SOLID WASTE EXCLUDED			
(3)(C)1	No unpermitted waste accepted.		
(3)(C)2	Sign posted at entrance listing excluded wastes.		
(4) SITE SELECTION			
(4)(C)1	Site accessible in all weather conditions. Temporary roads provided for delivery to working face.		
(6) WATER QUALITY			
(6)(C)1	Surface water courses and runoff properly diverted from the landfill. Sanitary landfill construction and grading to promote rapid surface water runoff without excessive erosion.		
(6)(C)2	Leachate collection and treatment systems utilized where necessary to protect ground and surface water resources.		
(6)(C)3	No ground or surface water in contact with solid waste.		
(7) AIR QUALITY			
(7)(C)	No open burning without written permission of the proper air pollution agency and the Division.		
(8) GAS CONTROL			
(8)(C)	Implementing decomposition gas control plan as necessary to prevent problems.		
(9) VECTORS			
(9)(C)	Vector control programs implemented when necessary to prevent or rectify vector problems.		
(10) AESTHETICS			
(10)(C)1	Litter control devices utilized near working face and elsewhere as needed. Litter collected from fences, and the ground surface, and incorporated into the daily cell at the end of each day or containerized.		
(10)(C)2	Wastes easily moved by wind covered as necessary to prevent their becoming airborne and scattered.		
(10)(C)3	On-site vegetation and natural windbreaks being utilized to improve appearance and operation of the sanitary landfill.		

SUBSECTION NUMBER	SATISFACTORY COMPLIANCE OPERATING PROCEDURE	SAT	UNS
(10) AESTHETICS (Continued)			
(10)(C)4	Salvaged materials removed daily or stored in aesthetically acceptable containers or enclosures.		
(11) COVER MATERIAL			
(11)(C)1	Daily cover applied regardless of weather in not less than a six inch layer. Cover material available in all weather conditions.		
(11)(C)2	Intermediate cover applied to all areas idle for more than 60 days in a layer not less than one foot after compaction.		
(11)(C)3	Final cover applied on each area as completed in a layer not less than two feet after compaction.		
(12) COMPACTION			
(12)(C)1	Adequate equipment on-site, operated daily.		
(12)(C)1A	Solid waste spread in layers not to exceed two feet and confined to smallest practical area.		
(12)(C)1B	Wastes compacted to smallest practical volume.		
(12)(C)1C	Cover material compacted as much as practical.		
(12)(C)2	Preventive maintenance performed.		
(12)(C)3	Daily task operating manual provided.		
(13) SAFETY			
(13)(C)1	Fire extinguishers provided on oil equipment.		
(13)(C)2	Provisions for extinguishing fires in waste, equipment, and structures.		
(13)(C)3	Communication equipment available.		
(13)(C)4	Scavenging prohibited.		
(13)(C)5	Controlled access to site by established roadways and limited to hours when operating personnel are on duty.		
(13)(C)6	Traffic controlled and directed to designated disposing points.		
(13)(C)7	Site dust controlled for safety purposes and to prevent nuisances.		
(14) RECORDS			
(14)(C)1A	Records of major problems and complaints.		
(14)(C)1B	Monitoring record maintained. a. leachate sampling and analyses, b. gas sampling and analyses, c. ground and surface water analyses.		
(14)(C)1C	Records of vector control efforts.		
(14)(C)1D	Records of dust and litter control efforts.		
(14)(C)1E	Records of quantity of waste handled.		
(14)(C)1F	Records of description, sources, and volume of special wastes listed in Subsection (3)(A).		

Methodology

Fourteen sanitary landfill facilities were selected representing each of the six regions included in the Regional Office Program. These facility files were obtained from the WMP's Enforcement Section in the Jefferson City central office. The Surveillance Records (inspection reports) were scrutinized to determine if all the compliance factors on the forms are routinely being utilized by the regional office inspectors.

Findings

- Surveillance record forms were generally filled in completely. In addition, a typed narrative frequently accompanied the checklist giving more details of any unsatisfactory features found with comments and recommendations. All inspection documents were signed by the inspector.

FREQUENCY OF HAZARDOUS WASTE FACILITY INSPECTIONS

The enforcement section of the Division of Environmental Quality is responsible for state inspections of hazardous waste storage and disposal facilities. The frequency of inspection is determined by agreements between the U.S. Environmental Protection Agency (USEPA) and the State Department of Natural Resources (DNR).

Statutory Authority

There are no state laws which require facilities to be inspected within a certain period of time. Federal law requires facilities to be inspected at a minimum of once every two years..

Regulatory Authority

There are no state regulations regarding inspection time frames.

Written Policy

DNR prepares a workplan to be reviewed by the USEPA. The workplan specifies the number of facilities to be inspected. In the past several years the work plan has specified one inspection per year for each facility.

Methodology

The purpose of this portion of the audit is to determine how often hazardous waste facilities are inspected. To make this determination a sample of 12 facilities was chosen. There are six regional offices that participate in

inspections and two facilities from each region were included in the review. A file review was made to determine the number of inspections of each facility. Staff from the Waste Management Program were interviewed regarding the inspection process both at the state and regional level.

Findings

- In general, inspections of Hazardous Waste Facilities are conducted at least once per year. The auditors did find one facility that was not inspected in 1982 and one facility that was not inspected in 1983. In both cases, it was at least 24 months between inspections (Table 5). The state's only off site hazardous waste landfill was being inspected weekly.
- It appears that, in the future, hazardous waste facilities will be inspected less frequently. USEPA's fiscal year 1986 RCRA Implementation Plan indicates that facilities (other than land disposal sites) will be inspected every other year instead of on a yearly basis.' Currently all major sites are inspected on a yearly basis. This deemphasis on inspections is intended to free up resources for a greater effort on enforcement of violations and groundwater monitoring of hazardous waste land disposal sites.

Table 5
Hazardous Waste Inspection Dates

Facility	Type	Regional Office	Inspection Dates
A	Storage	Kansas City	7/82, 4/83, 5/84, 2/85
B	Storage	Kansas City	1/81, 3/83, 4/84, 8/84, 6/85
C	Storage	Jefferson City	6/81, 4/82, 2/84, 6/85
D	Storage	Jefferson City	6/81, 12/83, 6/84, 4/85
E	Incinerator	Springfield	8/85
F	Storage	Springfield	6/82, 6/83, 5/84, 3/85
G	Storage	Macon	3/82, 3/84, 9/84, 10/84
H	Incinerator and Surface Impoundment	Macon	6/83, 4/84, 5/85
I	Storage	Poplar Bluff	2/84, 2/85
J	Storage	Poplar Bluff	6/82, 11/83
K	Incinerator	St. Louis	6/83, 11/84, 5/85
L	Landfill	St. Louis	Weekly since 1980

Source: Hazardous Waste Enforcement File

HAZARDOUS WASTE INSPECTION CRITERIA

The Waste Management Program (WMP) is responsible for inspections of hazardous waste treatment storage and disposal facilities. For interim status facilities compliance inspections are based primarily on federal regulations that govern interim status facilities (40CFR 265). Permitted facilities are inspected for compliance with the conditions of the permit and all other applicable state rules and regulations. Inspections are conducted to determine whether the facility is being maintained in compliance with state rules and regulations and is operated in accordance with approved engineering plans, specifications and operating procedures. Permitted facilities must follow the specific conditions of their permits. DNR has developed a checklist of the requirements for interim status facilities that includes all relevant state and federal regulations. Each permitted facility is to have a checklist developed that covers the specific conditions of the permit.

Statutory Authority

The duties of hazardous waste facility owners are stipulated in Section 260.390 RSMo.

Regulatory Authority

Facility requirements are included in 10 CSR 25-7.

Written Policy

Inspection Policy is included in the program description of the Application for Final Authorization submitted to USEPA (section F).

Methodology

Two facilities from each region were randomly selected. Inspection files were reviewed for these facilities to determine if the criteria identified on the interim status checklist had been addressed during the inspection. Permitted facilities were reviewed to see whether a checklist including the conditions of their permit was completed during the inspection. Three permitted facilities and nine interim facilities were among the twelve facilities reviewed.

Findings

- Two of the permitted facilities that were reviewed were inspected using the interim status checklist rather than a checklist of the specific condition of the permit. DNR's final authorization application to EPA specifically states that the interim status checklist should not be used for permitted facilities. The permit section has recently put in place coordination procedures for ensuring regional staff are prepared for a proper inspection of permitted facilities. During the preparation of the final permit, the WMP permit engineer will draft a memo, with a facility specific checklist for the regional office to assist in their inspection of the facility. This procedure which is in the process of being implemented should prevent the deficiency noted in the permitted inspection file.
- However, for each inspection noted in the inspection file an interim status checklist was completed and included in the file. A review of the checklist indicated that they were filled out completely and were used in the inspection reports written by the inspectors.

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ENFORCEMENT

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ENFORCEMENT ACTIVITIES

Through enforcement activities, the DNR provides safeguards against any waste facility threatening the public health and environment. This process involves several steps which should result in violations being corrected.

Statutory authority

RSMo 260.230 gives DNR the authority to issue administrative orders and to refer violations to a prosecuting attorney or the Attorney General for legal action. RSMo 260.375 gives DNR the same authority with respect to hazardous waste.

Written Policy

The procedures for enforcement activities are found in the Inspection and Enforcement Procedures Manual. Violations of waste management regulations are identified through either routine inspections or complaints. Hazardous waste facility operators and property owners of hazardous waste sites with illegal dumping receive a letter of warning followed by a notice of violation if the violation is not corrected. The initial step in correcting solid waste violations is the issuance of a notice of violation (NOV). If an NOV is not responded to by the operator, an administrative order may be issued. Page 6.5 of the Manual states that an "enforcement request is appropriate on or after the second repeat of any significant violations". If an administrative order fails to elicit the proper response, the facility may be referred to counsel for legal action.

The NOV and the referral for an enforcement action is primarily the responsibility of the regional offices. The WMP issues administrative and revocation orders and refers cases for legal action.

Methodology

Two methods were used to investigate how DNR resolves violations:

- All notice of violations issued in July of 1984 (10) and December of 1984 (12) were identified. The files on these violations were reviewed by Oversight staff to determine how and if each violation was resolved. A violation was considered resolved when DNR inspection reports showed no further problem or when required documentation showing compliance was in the folder. These violations included solid and hazardous waste.
- In addition, Oversight staff reviewed facility files for 14 sanitary landfills (representing all six regions) to determine if there were any unsatisfactory conditions recorded on quarterly inspections, and, if so, what action was taken by DNR. Significant inspection criteria were determined by using the criteria assigned factors 2 or 3 in the draft Solid Waste Management Study (pg. 29) compiled by WMP staff. Significant criteria included problems in the area of surface water diversion, leachate generation, open burning, daily cover and final cover. The time period reviewed was the most recent seven quarters ending September 1985.

Findings

The following findings are a result of the examination of NOV's for July and December 1984 which include both solid and hazardous waste:

- Of the 22 NOV's reviewed by Oversight staff, 13 (59%) have not been resolved. This includes six from July 1984 and seven from December 1984 (Table 6). Two of the unresolved NOV's were referred to USEPA and two are being appealed. One has had an administrative order issued. Negotiations for clean-up are occurring in one other case.
- In at least four of the 22 files reviewed, documented ongoing problems have existed at solid waste facilities for at least eight months without resolution.
- Five administrative orders were issued from the 22 NOV's reviewed.
- During the initial file review of the July and December 1984 NOV's, 17 (77%) of the files reviewed had insufficient information to determine if a case had been resolved. WMP staff was able to provide after contacting regional office staff, the missing information. Some information and determinations were based on verbal information.
- No formalized process exists for the WMP to track the resolution of NOV's. The files are not maintained in a manner in which follow-up information is accessible for reference.
- As shown in Table 7, 11 administrative orders against solid waste facilities and 131 NOV's were issued in FY85. For the same fiscal year, only one case was referred for prosecution. Fourteen administrative orders were issued for hazardous waste violations as a result of 78 NOV's. Ten

hazardous waste cases were referred to USEPA or the Attorney General for further legal action. This suggests that stronger emphasis is placed on enforcement activity involving hazardous waste as opposed to solid waste.

The following findings are based on the review of inspection reports of 14 solid waste landfills.

- Sixty-six of 106 inspection report forms issued on 14 sanitary landfills in the seven quarters of 1984-1985 contained one or more significant unsatisfactory ratings. Sixty-three percent of these inspections, therefore, revealed one or more significant problems at sanitary landfills at the time of inspection (see Table 8).
- The DEQ Inspection and Enforcement Manual indicates that NOV's should be issued whenever a violation of law or regulation is determined through inspections (page 1.4).
- Twenty-four notices of violation were issued as a result of the 66 inspection reports with significant violations. This represents 36 percent of the total number of unsatisfactory reports or approximately one NOV for every three significant unsatisfactory reports.
- As shown in Table 8, two of the 14 landfills had no significant unsatisfactory inspection ratings during the period examined.

The remaining 12 landfills showed a range from three to nine unsatisfactory reports in the seven quarters. Of these, five or 42 percent had a significant number of unsatisfactory reports (3-6) but no NOV's were issued as a result; therefore not following the manual guidelines. Seven of the 12 facilities were issued NOV's. The number of NOV's per facility ranged from one to seven.

- In the sample, the number of unsatisfactory inspection reports issued prior to the issuance of the first NOV for a given violation varies from zero to five. Any NOV's issued beyond the first were apparently issued immediately following the verification of the continued violation (see Table 8).
- The DEQ Enforcement and Inspection Manual states that it is advisable to request WMP enforcement action "on or after the second repeat of any significant violations" (pg. 6.5).

One administrative order was issued by WMP for these 66 significant unsatisfactory reports. This represents two percent of the unsatisfactory reports. Two requests for enforcement action were present in the files. Regional offices are not referring repeat offenders to the WMP for enforcement action. It is further evident that no one at the Central Office level is monitoring this function of the regional offices in waste management.

RECOMMENDATIONS

- WMP central office should adequately track the enforcement activities of the regional offices including updating and maintaining their files and follow-up on repeated violations.
- Additional enforcement attention to solid waste landfill violations by the central office is needed.
- Regional offices should provide written documentation of continued enforcement activities to the central office on a more consistent basis.
- Regional offices should request enforcement action as directed in the manual or the Waste Management Program should initiate enforcement action upon receipt of regional violation reports.

Table 6
RESOLUTION OF NOTICE OF VIOLATIONS ISSUED IN JULY 1984 AND DECEMBER 1984

FACILITY	DATE OF VIOLATION	HAS THE VIOLATION BEEN RESOLVED	TYPE OF VIOLATION	TYPE OF FACILITY	TYPE OF WASTE	ADMINISTRATIVE ORDER ISSUED
AA	7/5/84	No (USEPA is handling)	Failed to monitor groundwater properly	Generator	Hazardous	Yes
BB	7/9/84	Yes (8/21/84)	Hazardous waste stored more than 90 days without permit	Generator	Hazardous	No
CC	7/10/84	No (Referred to USEPA for determination)	Financial assurance not submitted	Facility	Hazardous	No
DD	7/11/84	Yes (12/17/84)	Financial assurance not submitted	Facility	Hazardous	No
EE	7/12/84	No (Will reinspect in FY86)	Failure to remove hazardous waste generated/operating without TSD permit	Generator	Hazardous	No
FF	7/20/84	Yes (8/13/84)	Improper storage and disposal of hazardous waste	Facility Generator	Hazardous	No
GG	7/20/84	No (On appeal)	Failed to file information	Generator	Hazardous	Yes
HH	7/26/84	No (Hearing date 12/3/85)	Lack of daily cover Improper salvaging Lack of wet water access	Landfill	Solid waste	Yes

Table 6
RESOLUTION OF NOTICE OF VIOLATIONS ISSUED IN JULY 1984 AND DECEMBER 1984

FACILITY	DATE OF VIOLATION	HAS THE VIOLATION BEEN RESOLVED	TYPE OF VIOLATION	TYPE OF FACILITY	TYPE OF WASTE	ADMINISTRATIVE ORDER ISSUED
II	7/29/84	No (Documentation submitted to be reviewed by enforcement unit)	Not registered as hazardous waste generator Improper completed manifests Improper labeling Improper disposal of industrial waste Inadequate preparedness and prevention plans	Generator	Hazardous	No
JJ	7/31/84	Yes (8/20/84)	Old signals and batteries dumped on railroad right of way		R.R. Crossing (Solid Waste)	No
KK	12/7/84	No (Facility not operated since 2/85)	Uncovered bales Plans not approved by WMP	Facility	Solid waste	No
LL	12/10/85	No (Given a 90-day extension to correct problem on 7/31/85)	Daily cover inadequate; bulky waste not crushed Water in contact with wastes; litter not controlled; wastes not covered as necessary spread in layers, or compacted properly	Landfill	Solid waste	Yes

Table 6
RESOLUTION OF NOTICE OF VIOLATIONS ISSUED IN JULY 1984 AND DECEMBER 1984

FACILITY	DATE OF VIOLATION	HAS THE VIOLATION BEEN RESOLVED	TYPE OF VIOLATION	TYPE OF FACILITY	TYPE OF WASTE	ADMINISTRATIVE ORDER ISSUED
MM	12/10/84	No (Inspection 8/1/85 still shows violations)	Solid waste in contact with water. Litter not covered as necessary, controlled or collected. Inadequate daily intermediate and final cover. Solid waste not spread in layers 2 ft. thick or compacted to smallest possible volume. Vegetation not established.	Landfill	Solid waste	No
NN	12/12/84	No (5/9/85 inspection shows continued problems)	Daily cover not applied; litter not removed; site accessible during nonoperating hours	Landfill	Solid waste	No
OO	12/12/84	Yes (6/11/85)	Daily cover not applied	Landfill	Solid waste	No
PP	12/17/84	No (6/10/85 inspection shows improvement but still has violations)	Surface water runoff Inadequate trench drainage; daily cover; final cover; no fire extinguisher	Landfill	Solid waste	No
QQ	12/18/84	No (Administrative order issued 6/26/85)	Solid waste site accessibility; water quality; aesthetics; covered material; compaction; safety	Landfill	Solid waste	Yes

Table 6
RESOLUTION OF NOTICE OF VIOLATIONS ISSUED IN JULY 1984 AND DECEMBER 1984

FACILITY	DATE OF VIOLATION	HAS THE VIOLATION BEEN RESOLVED	TYPE OF VIOLATION	TYPE OF FACILITY	TYPE OF WASTE	ADMINISTRATIVE ORDER ISSUED
RR	12/19/84	No (Negotiating for clean-up)	Electroplating waste water discharge (contain cyanide); failure to register as a hazardous waste generator; operating a hazardous land disposal area without groundwater monitoring; failure to post "restricted access" signs at the proper entrances; failure to provide financial assurance for closure procedures and sudden and accidental occurrences; failure to determine if solid waste generated on site is hazardous	Generator	Hazardous	Yes
SS	12/19/84	Yes (1/23/85)	Accepting excluded waste; excessive erosion; failure to provide daily cover solid waste not confined to smallest practical waste	Landfill	Solid waste	No
TT	12/19/84	Yes (2/22/85)	Financial responsibility	Generator	Hazardous	No
UU	12/20/84	Yes (5/20/85)	Solid waste disposal area without permit	Landfill	Solid waste	No
VV	12/20/84	Yes (11/30/85)	Burning and disposing of solid waste in two unpermitted areas	Unpermitted	Solid waste	No

Table 7
ENFORCEMENT ACTIVITIES FOR FY85

	Solid Waste	Hazardous Waste
Inspection Reports	502	219
Letters of Warning	NA	158
Notices of Violation	131	78
Administrative Orders	11	14
Referrals to USEPA, County Prosecutor or Attorney General	1	10

Source: WMP Monthly Activity Report

Table 8
14 SANITARY LANDFILLS ENFORCEMENT ACTION
SEVEN QUARTERS OF 1984-1985

Oversight Facility Code	Regional Office	Total No. Inspections 1984-1985 (7qtrs.)	No. Inspections Reports Containing One or More* SIGNIFICANT Unsatisfactory Rating	Total NOV's Issued This Period	No. Unsatisfactory Reports Prior to Issue of NOV	No. of Admin. Orders Issued This Period	No. of NOV's Issued Before Admin. Orders
M	JCRO	6	4 daily cover - 4 H2O diversion - 1	0	NA	0	NA
J	JCRO	8	6 daily cover - 6 leachate - 3 H2O diversion - 2	4	1 before 1st NOV 2 before 2nd NOV 0 before 3rd NOV 0 before 4th NOV	0	NA
N	PBRO	6	4 daily cover - 4 open burning - 1	1	3	0	NA
F	PBRO	9	7 daily cover - 4 H2O diversion - 2 final cover - 3	4	1 before 1st NOV 0 before 2nd NOV 0 before 3rd NOV 0 before 4th NOV	1	4

* Page 29 of the Solid Waste Management Study (5/85) compiled by Waste Management Program staff, assigns multiplication factors to inspection criteria. These multiplication factors (of 1, 2, or 3) were discussed and agreed upon by a panel of waste management personnel. The larger factors of 2 and 3 were assigned where the possibility of more serious environmental problems may result due to improper operation. "Significant" unsatisfactory ratings in this table therefore, reflect problems with the following: surface water diversion (x2), leachate generation (x3), open burning (x2), unsatisfactory daily cover (x2 or x1), and unsatisfactory final cover (x2).

Table 8 (continued)
 14 SANITARY LANDFILLS ENFORCEMENT ACTION
 SEVEN QUARTERS OF 1984-1985

Oversight Facility Code	Regional Office	Total No. Inspections 1984-1985 (7qtrs.)	No. Inspections Reports Containing One or More* SIGNIFICANT Unsatisfactory Rating	Total NOV's Issued This Period	No. Unsatisfactory Reports Prior to Issue of NOV	No. of Admin. Orders Issued This Period	No. of NOV's Issued Before Admin. Orders
A	KCRO	6	4 daily cover - 2 H2O diversion - 2	0	NA	0	NA
I	KCRO	9	6 daily cover - 6 H2O diversion - 1	0	NA	0	NA
B	KCRO	7	4 daily cover - 2 leachate - 3 accept unpermitted waste - 1	3	0 before 1st NOV 0 before 2nd NOV 0 before 3rd NOV	0	NA
E	MRO	7	5 daily cover - 1 H2O diversion - 4	0	NA	0	NA
K	SPRO	13	8 daily cover - 5 final cover - 1 H2O diversion - 1 leachate - 2	4	4 before 1st NOV 0 before 2nd NOV 0 before 3rd NOV 0 before 4th NOV	0	NA

Table 8 (continued)
14 SANITARY LANDFILLS ENFORCEMENT ACTION
SEVEN QUARTERS OF 1984-1985

Oversight Facility Code	Regional Office	Total No. Inspections 1984-1985 (7qtrs.)	No. Inspections Reports Containing One or More* SIGNIFICANT Unsatisfactory Rating	Total NOV's Issued This Period	No. Unsatisfactory Reports Prior to Issue of NOV	No. of Admin. Orders Issued This Period	No. of NOV's Issued Before Admin. Orders
L	SPRO	9	6 daily cover - 1 leachate - 6	1	5	0	NA
H	SPRO	15	9 daily cover - 5 final cover - 1 H2O diversion - 1 leachate - 6	7	1 before 1st NOV 0 before 2nd NOV 0 before 3rd NOV 0 before 4th NOV 0 before 5th NOV 0 before 6th NOV 0 before 7th NOV	0	NA
G	SRO	1	0	0	NA	0	NA
C	SRO	5	3 final cover - 1 leachate - 3	0	NA	0	NA
D	SRO	5	0	0	NA	0	NA
TOTALS		106	66	24		1	

Source: Waste Management Program's Enforcement Files

**GROUNDWATER MONITORING AT SOLID WASTE
FACILITIES AND LANDFILLS**

The potential for contamination of groundwater by waste facilities requires a properly conducted monitoring program of solid waste facilities and landfills.

Statutory Authority

RSMo 260.225 (7) states that the department is to issue such permits and orders and conduct such inspections as may be necessary to implement the solid waste law and regulations. RSMo 260.205 (4) directs the department to revoke permits for those solid waste facilities or disposal areas which create a public nuisance, health hazard or environmental pollution.

Regulatory Authority

10 CSR 80-3.010 requires all sanitary landfill plans to conform to applicable ground and surface water quality standards and requirements. The same requirement exists for demolition landfills (10 CSR 80-4.010) and processing facilities (10 CSR 80-5.010).

Written Policy

The method used for monitoring groundwater contamination at solid waste landfills and facilities depends on the requirements of the individual permit. The Collection and Analysis of Water Samples Technical Bulletin specifies how samples are to be taken and states that the department lab will collect samples annually.

Methodology

From the WMP form "Appendix B-2-New Monitoring Point Numbering System" 19 solid waste facilities were selected as a sample of the 37 solid waste facilities which are required to have some form of groundwater monitoring. On each of the sample facilities a print-out of the latest test results was requested. The print-out was analyzed in terms of the frequency of testing, the number of wells tested and the entity completing the test (private lab vs. state lab) for the past two years.

In addition, several staff members were interviewed in order to determine what procedures were followed and activities occurred in groundwater monitoring.

Findings

- DNR has not routinely taken and tested samples from groundwater monitoring wells since July, 1984. Wells are tested only upon special request.
- Five (26%) of the 19 facilities in the Oversight sample had their wells tested by the state in FY85.
- DNR staff are not evaluating the private lab results on a routine basis. The reasons stated for not monitoring were lack of staff time and the questionable nature of the data. DNR has only minimal control of how and when testing is done, and does not know the condition of the wells used for testing.
- No program exists for evaluating the physical condition of wells or the testing of samples by laboratories. The automated system to monitor testing provides baseline data on background groundwater quality for the facilities that are required to report testing results; however, no

verification through testing by the state lab of this data exists.

- The data in the groundwater monitoring system is not being kept current. The latest printout, which was run in July 1985, has data from tests in March 1985 for one facility in the sample while the latest data on the remaining 18 facilities were for February 1985.
- Much of the procedure which is now performed by an engineer to track facility testing of wells is clerical in nature.
- Of 155 disposal facilities, 118 are not required to monitor groundwater because their permit was issued prior to the time DNR required monitoring or because the geology of the land is such that monitoring was deemed unnecessary. Thirty-seven landfills are required to monitor groundwater and seven additional facilities are required to monitor surface water; six of which are closed facilities.
- WMP staff evaluated groundwater problems at sanitary landfills. The Solid Waste Management Study (draft) contains a geographic evaluation of each sanitary landfill, a review of any previous groundwater testing of the facility and an interpretation of the severity of any contamination. The evaluation showed that 74 sanitary landfills or 69% have minor or no groundwater problems. Two landfills were identified as having moderate problems. In some cases this determination was not made on the basis of groundwater testing since some of the facilities do not have testing equipment. The remaining 31 landfills are classified as "undetermined" because of: questionable geology, lack of monitoring equipment, and /or questionable testing results.

Recommendations

Because of the resources utilized in groundwater monitoring by both the state and private facilities, DNR should use its groundwater monitoring system as it was designed to be used. If the system is deemed a necessary tool then resources should be utilized to:

- Investigate the possibility of requiring all sanitary landfills to monitor groundwater where the geology is questionable regardless of when a permit was issued.
- Keep the testing data current and assign qualified staff to interpret the data in a timely manner.
- Assign the routine processing of forms to nonprofessional staff.
- Assign staff to follow-up on questionable test results.
- Test wells annually at each facility as provided for in WMP policy and compare the results against the private lab's results.
- Ensure that each facility have baseline data on background water quality.

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PLANNING

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LOCAL SOLID WASTE MANAGEMENT PLANNING

Solid waste management plans provide for future waste management facilities and proper disposal of waste. Local governments are required to have plans. This section examines the question of whether or not local government waste management plans comply with the law, and if state planning efforts are adequate to meet the future waste disposal needs of the state.

Statutory Authority

RSMo 260.220 requires that, unless exempted, "each county and city shall submit to the department an officially adopted plan for solid waste management system or systems serving areas within its jurisdiction and shall, from time to time, submit each such revision of said plan as it deems necessary or as the department may require." This includes all incorporated cities and villages with a population over 500, most first class counties, and all incorporated cities and villages regardless of population size, located in those first class counties. RSMo 260.220 (6) gives the director authority to institute appropriate action to compel submission of plans. The department is to review and approve the plans.

Regulatory Authority

Regulations do not address planning efforts.

Written Policy

The document identified as the state solid waste plan entitled Solid Waste Management in Missouri specifies what is to be included in local plans and requires cities to notify DNR of changes in their plans.

Methodology

A survey was prepared by Oversight Staff and sent to a sample of 119 cities (see Appendix C). The survey was stratified by population. Of the 119 surveys mailed, 48 responses were received as follows:

Table 9

	Number of Surveys Sent	Sent to % of Cities	Number of Responses
More than 100,000	4	100%	3
99,999 to 25,000	12	100%	6
24,999 to 10,000	17	50%	11
9,999 to 5,000	12	25%	5
4,999 to 1,000	54	25%	17
999 to 500	20	25%	6
Total	119	30%	47

The WMP was asked for information on the number of local plans approved and the activity currently being placed on local planning.

Findings

- Many governments have not been complying with the state law concerning local waste management systems and local governments for the most part are not submitting revisions as required by law.
- According to the Missouri Solid Waste Management Study (draft, May 1985) prepared by the Waste Management Program, of the five counties required to implement DNR-approved plans, three are not in compliance and two have approved plans which are approximately ten years old. Of the 506 cities required to implement DNR-approved plans, 71 cities are not in compliance (15.6%). Of the 383 cities with approved plans, the majority were approved in the mid 1970s.
- Of the 47 responses to the questionnaire, 24 (51%) indicated that they had no waste management plan; 19 (40%) said they did have a plan and 5 (11%) did not answer, primarily because they did not understand what a waste management plan was. All respondents who said they had a plan indicated that their plans had been approved by DNR.
- Twelve of the respondents marked that they did not have a plan because it was not needed, seven said they did not have the funds, nine said they lacked staff and four said they lacked expertise.
- Twelve respondents gave a date for approval of their plans. Five of the plans were more than ten years old and two were more than five years old.
- Based on inquiries about the questionnaire, some local governments are unaware of the solid waste management plan requirements.

- DNR planning efforts and assistance to local governments is limited and insufficient to meet the needs of the state. The DNR has promulgated no regulations which would enforce the statutes relating to local waste management plans. Further, DNR has not initiated enforcement actions against local governments which do not have approved plans or required local governments to update the plans that have been approved.
- Central Office staff assigned to solid waste planning efforts has been reduced from three planners in FY75-79 to one planner in FY82.
- The Central Office Planning Unit has provided only minimal technical assistance to local governments in the past year. DNR provided direct personal assistance to only two counties and information to eight cities.
- The Waste Management Program's FY86 appropriation provides for two FTE's to assist in planning efforts. These positions are to be filled by Environmental Specialists who are to be placed in the regional offices.
- In order to address the shortage of staff, WMP proposed targeting certain communities in the southern part of the state to receive assistance in planning for future waste disposal needs. This area was selected because the geology of the area is poorly suited to landfills; inadequate landfill capacity and the existence of landfills with major operational problems.

Recommendations

- Assuming no further resources will be dedicated to planning efforts, it is recommended that the WMP proposal to target southern Missouri be approved at the departmental level and implemented. It is also recommended that a staggered schedule of requests for local plan revisions be started as personnel time allows for review.
- To ensure local governments comply with the law, the following activities are recommended:
 - Promulgate and enforce regulations on local government solid waste management plans.
 - Inform all local governments of the solid waste management plan requirements requesting revisions of existing plans.
 - Provide additional technical assistance as needed to update plans.
 - Update the state solid waste management plan to reflect an integration of revised local plans and to include a projection of future waste management needs.

FUTURE LANDFILL CAPACITY

Almost all the waste generated in the state is disposed of in sanitary landfills. Alternative disposal or recovery methods are not being used for economic and/or technical reasons.

Alternative methods may take as long as five years of planning as opposed to two years for a sanitary landfill. Therefore, it is important that properly operated landfills be available for waste disposal until alternatives are developed.

Sanitary landfills were created in the mid 1970s in response to state and federal laws requiring alternatives to open dumping. These landfills, built in the 70's, are quickly reaching their capacity.

Statutory Authority

DNR is responsible for the permitting of sanitary landfills but is only indirectly involved in assuring adequate capacity for waste disposal. According to RSMo 260.220 local governments are required to provide for the safe and sanitary disposal of solid waste as part of their solid waste management plan. DNR is to approve these plans.

Regulatory Authority

No regulations have been promulgated in this area.

Written policy

The document identified as the state solid waste plan entitled Solid Waste Management in Missouri identifies the need for advanced planning for landfill capacity under its requirements for local plans. DNR, under the state plan, is "to use an update of local solid waste management plans as a convenient mechanism for reminding communities to negotiate

new contracts, ordinances or changes in their solid waste management plans relative to future landfill availability."

Methodology

The Waste Management Program was asked to estimate the remaining capacity of permitted landfills and the anticipated capacity of landfills applying for permits. Information on the generation of waste and interstate movements of waste in the state was also requested.

Findings

- Waste Management Program staff was unable to estimate the remaining capacity of permitted landfills or the future capacity of landfills applying for permits.
- The Missouri Solid Waste Management Study(draft), prepared by WMP estimated that 72 of the existing 105 landfills or 68% of sanitary landfills will be filled to capacity by the year 1990. Illustration 3 at the end of this section shows the location of the 32 landfills which are projected to be in operation in 1990. These estimates were based on information found in the WMP facility files and on regional personnel's estimate of facility life.
- At the time of the WMP study, there were four applications for new landfill permits and eight applications for expansion of existing permits. Taking these into consideration, there are geographic areas within the state (northeast, southern) for which no sanitary landfill will be available after 1990.
- The Waste Management Program estimates that 39% of the waste generated in the St. Louis area is disposed of in Illinois. Five landfills in the Illinois counties of St. Clair and Madison are currently in litigation to be shut down. If

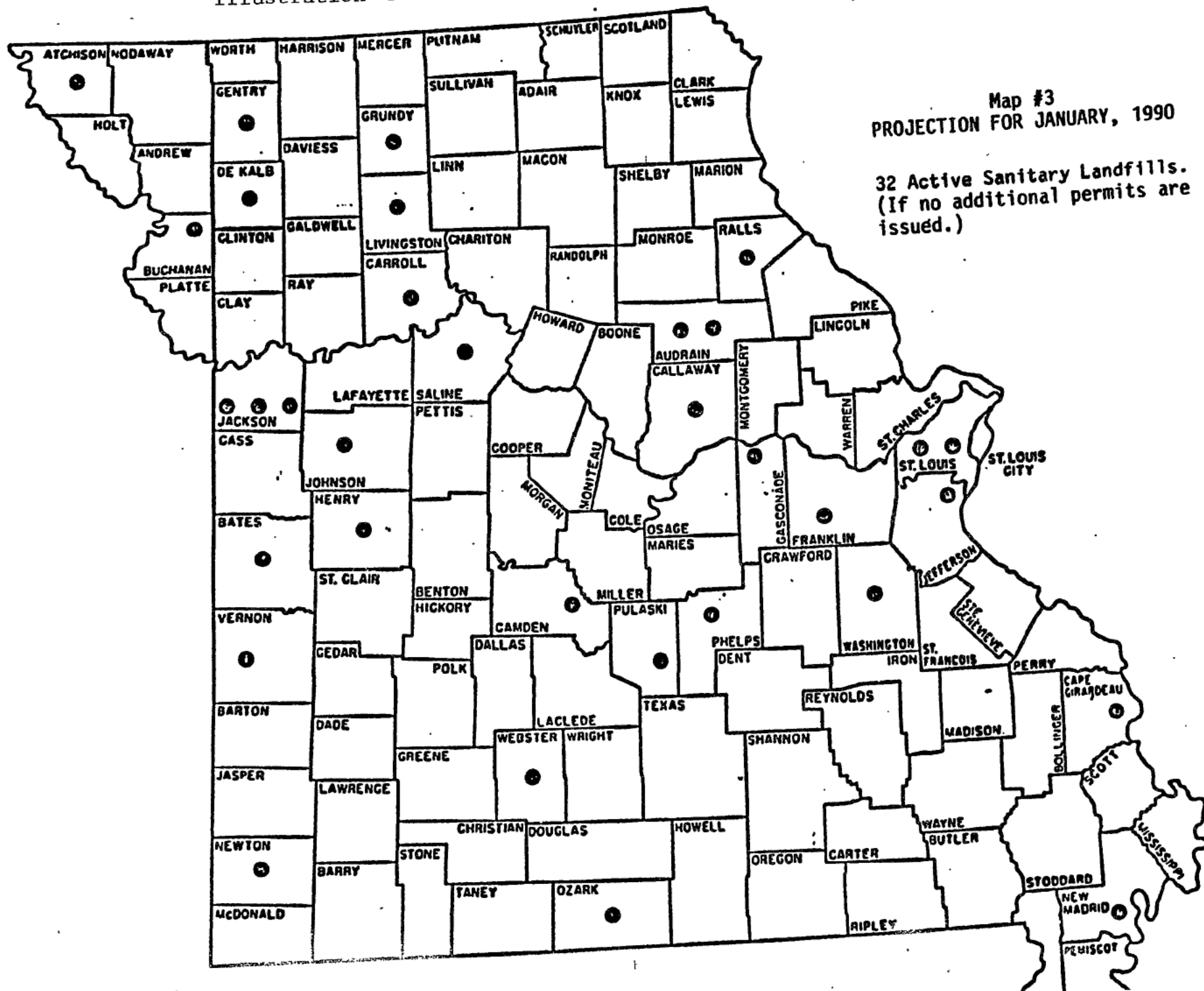
these are shut down, the capacity for waste disposal in the St. Louis area will be greatly diminished.

- According to the WMP study, of the existing 105 sanitary landfills, 18 have operational and/or leachate problems which could result in suspension of operations (Illustration 4). These landfills are found primarily in the southern part of the state.

Recommendations

- DNR, through local planning efforts, should enforce the law requiring local governments to plan and provide for adequate disposal capacity or alternatives.
- DNR should provide technical assistance to local governments in their planning efforts.

Illustration 3



SANITARY LANDFILLS IN MISSOURI

LEGEND

- Sanitary Landfill, Existing
- Sanitary Landfill, Existing with Expansion Request under Review
- Sanitary Landfill, Proposed-Application under Review

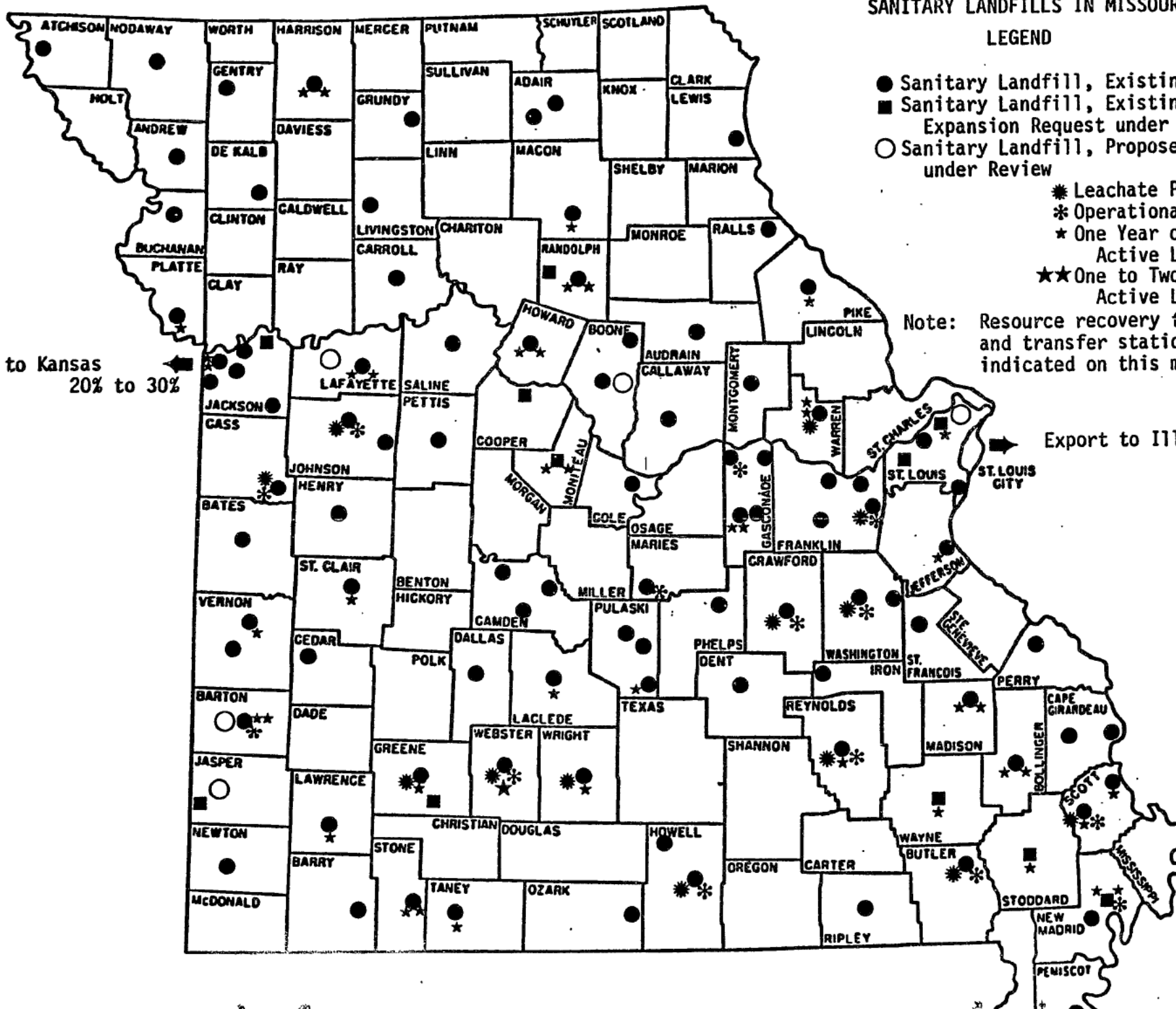
- * Leachate Problems
- * Operational Problems
- * One Year or Less of Active Life
- ★★ One to Two Years Active Life

Note: Resource recovery facilities and transfer stations are not indicated on this map.

66

Export to Kansas
20% to 30%

Export to Illinois 39%



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CLEAN-UP OF HAZARDOUS WASTE SITES

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STATUS OF HAZARDOUS WASTE SITES

Numerous sites in Missouri have been placed on the registry of confirmed abandoned and uncontrolled hazardous waste disposal sites. Additional sites in the state have been identified as having hazardous substances which present a danger to the public health or environment. The purpose of this section is to determine the status of the sites in terms of clean-up and the locations of the sites.

Statutory Authority

RSMo 260.435--260.480 requires the department to maintain and make available a registry of confirmed abandoned or uncontrolled hazardous waste disposal sites. RSMo 260.375 (29) gives DNR the authority to control, abate or clean-up hazardous waste. RSMo 260.510 gives the director the authority to take actions necessary to clean-up hazardous substances. Hazardous Waste as defined by Missouri statute:

"Hazardous waste", any waste or combination of wastes, as determined by the commission by rules and regulations, which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness, or pose a present or potential threat to the health of humans or the environment.

A hazardous substance as defined by Missouri statute:

"Hazardous substance", any substance or mixture of substances that presents a danger to the public health or safety or the environment and includes:

(a) Any hazardous waste identified or listed by the department under sections 260.350 to 260.430;

(b) Any element, compound, mixture, solution, or substance designated pursuant to Sections 101(14) and 102 of the Comprehensive Environment Response, Compensation, and Liability Act of 1980; and

(c) Any hazardous material designated by the Secretary of the United States Department of Transportation under the Hazardous Materials Transportation Act;

(d) Hazardous substances does not include radioactive materials, wastes, emissions or discharges that are licensed or regulated by laws of the federal government or of this state. However, such material released due to a transportation accident shall be considered a hazardous substance.

Regulatory Authority

CSR 10.25-10 states the procedure for placing a site on the Registry including time limitations, requirements and appeals.

Written Policy

The Annual Report of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri includes a description of all sites placed on the registry. It also describes the procedure followed in identifying and placing a site on the registry.

Methodology

Through interviews with Waste Management Program staff, DEQ administration staff and USEPA staff and reviews of various reports, a list of contaminated sites was compiled. These reports included Annual Report of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri, WMP Monthly Status Report and listings of DNR activity codes. Information on the status, location and estimated cost of clean-up for each site was requested from WMP, DEQ, and USEPA.

Findings

- One hundred and four contaminated sites were identified during this process. Forty-nine of these sites are dioxin sites (Table 10). (The reported number of sites varies depending upon whether or not several sites are combined into one site, e.g. Minker/Stout.) Three sites are radioactive waste sites (Table 11). The remaining sites contain various other hazardous substances (Table 12). This is not a complete list of sites as additional sites continue to be identified.
- The Registry has restrictions as to what is placed on it; therefore, not all sites identified here are on or proposed for the Registry. Forty-nine sites have been placed on the Registry (Table 13). Another 23 are being proposed for the Registry. The hazardous materials found at the remaining sites may not fall under the definition of hazardous waste for registry purposes but are considered hazardous substances or sufficient DNR analysis of the site has not been completed to propose the site for placement on the registry.

- Twelve of the sites listed on Tables 10, 11, and 12 are on the National Priorities List under six combined site names and nine are proposed for the National Priority List (Table 14).
- Twenty-eight sites have been identified by USEPA or WMP as having been cleaned-up (Table 15). These sites were relatively inexpensive to clean-up compared to the projected costs of cleaning up the remaining sites. Three of these sites were cleaned-up with DNR funds. A site is considered cleaned-up when the hazardous substance has been removed and the materials remaining are no longer a threat to public health or the substance has been treated to remove the threat to public health.
- Nine sites have been stabilized or contained. These are dioxin sites which generally have been paved over.
- In addition to the sites already cleaned-up, fifteen sites have been committed for clean-up by DNR or USEPA (Table 16). Private funds or USEPA commitment has been secured on each of these sites.
- Fifty-three percent of the 104 sites are found in the St. Louis area (Franklin, Jefferson, St. Charles, St. Louis, St. Louis City). Nine percent are found in the Kansas City area (Jackson, Platte, Clay). Table 17 lists sites by county. Illustration 5 shows number of sites by county.

Table 10
STATUS OF DIOXIN SITES

Site Name	Listed on Registry	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Syntex (Springfield)	Yes	NA	No	No	No	Yes--being cleaned-up under RCRA	1987	Private
Bliss Property at Ellisville	Yes	NA	Yes Part of Ellisville site	NA	No	Draft focused feasibility study complete	1987	USEPA--90% DNR--10% Estimated Cost \$20 million
Baxter Gardens	Yes	NA	No	No	No	Yes	Unknown	Private
Syntex (Verona)	Yes	NA	Yes	NA	No	Sampling/clean-up pursuant to consent order	Unknown	Private
Santag Rd. Swim Club & Fire Station	Yes	NA	No	No	No	Action memo signed immediate removal initiated	End of 1986	USEPA--100% \$12.7 million
Bliss Farm Road and Piazza Road	Yes	NA	No	No	No	Litigation proceeding	Unknown	Unknown
Times Beach	Yes	NA	Yes	NA	No	Phase II feasibility study initiated. Phase I Spur Levee Project complete 7/85	Phase II & III off Spur Levee Project scheduled for 1986	USEPA--90% DNR--10%

Source: Waste Management Program Staff; U.S. Environmental Protection Agency--Kansas City Region Staff; Division of Environmental Quality Staff; WMP Monthly Status Reports; Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri; DNR Activity Code Report.

Table 10
(continued)
STATUS OF DIOXIN SITES

Site Name	Listed on Registry ¹	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Minker/Stout	Yes	NA	Yes	NA	No	Immediate removal	1986	USEPA--90% DNR--10%
Portions of Romaine Creek	Yes	NA	Part of Minker/Stout	NA	No	Focused removal Feasibility study underway	1986	USEPA--90% DNR--10%
Bubbling Springs Stables	Yes	NA	No	No	No	Environmental assessment Remedial investigation Litigation proceeding	Unknown	Unknown
Shenandoah Stables	Yes	NA	Yes	NA	No	Environmental assessment Remedial investigation Litigation proceeding	Unknown	USEPA--90% DNR--10%
Saddle and Spur Stables	Yes	NA	No	No	No	Environmental assessment Remedial investigation Litigation proceeding	Unknown	Unknown
Timberline Stables	Yes	NA	No	No	No	Environmental assessment Remedial investigation Litigation proceeding	Unknown	Unknown

Table 10
(continued)
STATUS OF DIOXIN SITES

Site Name	Listed on Registry	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Neosho Digester and Trenches	Yes	NA	No	No	Contained	Cap installed Some monitoring to be initiated	Unknown	USEPA--100%
Manchester Methodist Church	Yes	NA	No	No	No	No	Unknown	Unknown
Abrahamson Property	Yes	NA	Part of Minker/Stout	NA	No	Injunction against property owner	1986	USEPA--90% DNR--10%
Davis Residence	Yes	NA	Part of Minker/Stout	NA	No	No	1986	USEPA--90% DNR--10%
Jones Truck Lines	Yes	NA	No	No	Stabilized	Site has been paved	Unknown	Private
Sandcut Road	Yes	NA	No	No	Stabilized	Site has been paved and trailer cleaned	Unknown	USEPA--100%
Private drive off Highway 100	Yes	NA	No	No	No	None	Unknown	Unknown
Erwin Farm	Yes	NA	No	No	Yes	Immediate removal complete (Mobile incinerator)	NA	USEPA--100%
Rusha Farm	Yes	NA	No	No	Yes	Immediate removal complete (Mobile incinerator)	NA	USEPA--100%

Table 10
(continued)
STATUS OF DIOXIN SITES

Site Name	Listed on Registry	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Neosha Waste Water School Tank and Spill	Yes	NA	No	No	No	Immediate removal approved	Fall 1985	USEPA--100%
Quail Run	No	Yes	NA	Yes	No	Yes--In clean-up process	Spring 1986	USEPA--100%
Bliss (Frontence) site	No	Yes	No	No	Stabilized	Yes--Remedial activity Litigation proceeding	Unknown	USEPA--100%
Castlewood	No	No	No	No	Portions stabilized	See Santag Rd.	End of 1986	USEPA--100% \$12.7 million
Sullins	No	Yes	No	No	Yes	NA	NA	USEPA
Tally Farm	No	No	No	No	No	Site scheduled for immediate removal 10/85	1985	USEPA
Arkansas Best Freight	No	No	No	No	No	Site is paved	Unknown	Unknown
Overnight	No	Yes	No	No	Stabilized	Site has been paved	Unknown	Unknown
Hammel	No	Yes	No	No	No	No	Unknown	Unknown
East Texas Motor Freight	No	No	No	No	No	Negotiations with site owner	Unknown	Unknown

Table 10
(continued)
STATUS OF DIOXIN SITES

Site Name	Listed on Registry ¹	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Bonifield Brother Truckline	No	No	No	No	No	Site is paved and fenced	Unknown	Unknown
Union Carbide	No	No	No	No	No	Negotiations	Unknown	Unknown
Conservation Chemical	Yes	NA	No	Yes	No	Settlement reached	1987	Private \$15 million
Balwin Park	No	No	No	No	No	Negotiations continuing	Unknown	Unknown
Denny Farm	No	No	No	No	Yes	Mobile incinerator used	NA	USEPA--100%
Superior Solvents	No	No	No	No	No	Feasability study initiated	Unknown	Private
Ray Farm	No	No	No	No	Yes	No	NA	USEPA
Southern Cross Lumber Company	Yes	NA	No	No	No	None	Unknown	Unknown
Community Christian Church	No	Yes	No	No	Stabilized	Site has been paved	Unknown	Unknown
Monsanto--Queeny Plant	No	Yes	No	No	Yes	NA	NA	Private
East North St.	No	Yes	No	No	Stabilized	Site has been paved	Unknown	USEPA

Table 10
(continued)
STATUS OF DIOXIN SITES

Site Name	Listed on Registry ¹	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Bull Moose Tube	No	Yes	No	No	Stabilized	Contaminated parking area sealed	Unknown	Unknown
Wall Property/ Piazza Rd.	Yes	NA	No	No	No	Litigation proceeding	Unknown	Unknown
Cashel	No	Yes	No	No	Yes	NA	NA	USEPA
Ellisville Neighbors Site	No	Yes	Yes (Part of Ellisville site)	NA	No	Feasability study for remedial options	1987	USEPA--90% DNR--10%
Rosalie Site	Yes	NA	Yes (Part of Ellisville site)	NA	No	Negotiations for settlement	Mid 1986	Either USEPA--90% DNR--10% or responsible parties
Callahan Site	No	No	Yes (Part of Ellisville site)	NA	Yes	Final grading	NA	Private

Table 11
STATUS OF RADIOACTIVE SITES

Site Name	Listed on Registry	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Weldon Spring Quarry	No	No	No	Yes	No	DOE incorporating RI/FS into EIS process	1995	USDOE \$250 million
Latty Ave.	No	No	No	No	No	Stablized Planning for clean-up	Unknown	USDOE
Slaps Sites	No	No	No	No	No	Stabilized Planning for clean-up	Unknown	USDOE

Source: Waste Management Program Staff; U.S. Environmental Protection Agency--Kansas City Region Staff; Division of Environmental Quality Staff; WMP Monthly Status Reports; Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri; DNR Activity Code Report.

Table 12
STATUS OF NON-DIOXIN AND NON-RADIOACTIVE SITES

Site Name	Listed on Registry ¹	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Solid State Circuit	Yes	NA	NA	Yes	No	Emergency clean-up in progress. Finale site clean-up after state RI/FS	1988	Private USEPA--90% DNR--10% \$35 million
Lee Chemical	Yes	NA	NA	Yes	No	Planning activities	1990	USEPA--90% DNR--10%
BFI Missouri City	Yes	NA	No	No	No	Filed closure plan	1987	Private
Amoco Oil Co.	Yes	NA	No	No	No	Closing under RECRA-EPA lead	Unknown	Private
International Paper	Yes	NA	No	No	No	Negotiating clean-up under RECRA	1987	Private
Joplin Oil Ponds	Yes	NA	No	No	No	Negotiating for clean-up	1986	City of Joplin
Wheeling Disposal	Yes	NA	No	No	No	None	Unknown	Unknown
Branson Quarry	Yes	NA	No	No	Yes	DNR confirming clean-up complete	NA	Private
Robbins Property	Yes	NA	No	No	No	Yes	1987	DNR

Source: Waste Management Program Staff; U.S. Environmental Protection Agency--Kansas City Region Staff; Division of Environmental Quality Staff; WMP Monthly Status Reports; Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri; DNR Activity Code Report.

Table 12
(continued)
STATUS OF NON-DIOXIN AND NON-RADIOACTIVE SITES

Site Name	Listed on Registry ¹	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Riverfront Landfill	Yes	NA	No	No	No	EPA lead	Unknown	Unknown
Fulbright Landfill	Yes	NA	Yes	NA	No	Remedial investigation	Unknown	Private
Murray Landfill	Yes	NA	No	NA	No	Remedial Investigation	Unknown	Private
Pigeon Hill Landfill	Yes (half)	Yes (half)	No	No	No	Monitoring	Unknown	City of St. Joseph Private
Armco	Yes	NA	No	No	No	None	Unknown	Unknown
Cooksey's Barrel Site	Yes	NA	No	No	No	None	Unknown	Unknown
TSI Mulberry Hill Road	Yes	NA	No	No	Yes	DNR confirming clean-up complete Still need to move waste	NA	Private
Chevron Chemical	Yes	NA	No	No	No	None	Unknown	Unknown
University of Missouri South Farm	Yes	NA	No	No	No	None	Unknown	Unknown
A.P. Green	Yes	NA	No	No	No	None	Unknown	Unknown

Table 12
(continued)
STATUS OF NON-DIOXIN AND NON-RADIOACTIVE SITES

Site Name	Listed on Registry ¹	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Quality Platting	No	No	No	Yes	No	Preliminary Planning	1990	USEPA--90% DNR--10% \$35 million
Findelt Corp.	No	No	No	Yes	No	EPA negotiating clean-up	Unknown	USEPA--90% DNR--10% \$20 million
Lake City Army	No	Yes	No	Yes	No	Applied for facility permit	Unknown	U.S. Army
North U. Drive	No	No	No	Yes	No	USEPA provided new water source. Site clean-up still to be accomplished	1988	USEPA--90% DNR--10% \$35 million
Bee Cee Manufacturing	No	No	NA	Yes	No	Preliminary planning	1989	USEPA--90% DNR--10% \$35 million
Folk Avenue Site	No	Yes	No	No	No	Yes under consent agreement	1986	Private
ACF Site	Yes	NA	No	No	Yes	Not cleaned-up to DNR satisfaction Continue to monitor	NA	Private
Todd Site	No	Yes	No	No	Yes	Not cleaned-up to DNR satisfaction	NA	Private
U.S. Polymer	No	No	No	No	Yes	NA	NA	Private

Table 12
(continued)
STATUS OF NON-DIOXIN AND NON-RADIOACTIVE SITES

Site Name	Listed on Registry	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Mexico Feed and Seed	No	No	No	No	Yes	NA	NA	USEPA
Parkhurst Mfg.	No	No	No	No	Yes	NA	NA	Private
Defiance Site	No	No	No	No	Yes	NA	NA	Private
Wheeler Property	No	No	No	No	Yes	NA	NA	Private/ Pettis county
Hudson Site	No	No	No	No	Yes	NA	NA	Private
Saline Creek Site	No	No	No	No	Yes	NA	NA	Private
Fire Trail	No	Yes	No	No	Yes	NA	NA	DNR
Market St. Apts.	No	No	No	No	Yes	NA	NA	DNR
Division of Parks Warehouse	No	No	No	No	Yes	NA	NA	DNR
Stewart Sanitary Supply	No	No	No	No	Yes	NA	NA	USEPA
Victor Products	No	No	No	No	Yes	NA	NA	USEPA
Valley Park	No	No	No	Yes	No	Will be studying with state funds	Unknown	USEPA--90% DNR--10% \$35 million

Table 12
(continued)
STATUS OF NON-DIOXIN AND NON-RADIOACTIVE SITES

Site Name	Listed on Registry	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Mexico Feed and Seed	No	No	No	No	Yes	NA	NA	USEPA
Parkhurst Mfg.	No	No	No	No	Yes	NA	NA	Private
Defiance Site	No	No	No	No	Yes	NA	NA	Private
Wheeler Property	No	No	No	No	Yes	NA	NA	Private/ Pettis county
Hudson Site	No	No	No	No	Yes	NA	NA	Private
Saline Creek Site	No	No	No	No	Yes	NA	NA	Private
Fire Trail	No	Yes	No	No	Yes	NA	NA	DNR
Market St. Apts.	No	No	No	No	Yes	NA	NA	DNR
Division of Parks Warehouse	No	No	No	No	Yes	NA	NA	DNR
Stewart Sanitary Supply	No	No	No	No	Yes	NA	NA	USEPA
Victor Products	No	No	No	No	Yes	NA	NA	USEPA
Valley Park	No	No	No	Yes	No	Will be studying with state funds	Unknown	USEPA--90% DNR--10% \$35 million

Table 12
(continued)
STATUS OF NON-DIOXIN AND NON-RADIOACTIVE SITES

Site Name	Listed on Registry	Proposed for Registry	On Federal Priority List	Proposed For Federal Priority List	Site Cleaned-Up	On-Going Activity	Estimated Clean-Up Date	Funding Source and Estimated Cost
Lawrence	No	No	No	No	Yes	NA	NA	Private
Kramer	No	No	No	No	Yes	NA	NA	Private
Enterprise Park	NA	Yes	No	No	No	Negotiating for clean-up	Unknown	Private
Hardt Road Site	Yes	NA	No	No	No	No	NA	Unknown
Westlake Landfill	Yes	NA	No	No	No	No	NA	Unknown
Zykan Site	NA	Yes	No	No	No	No	NA	Unknown
Lebanon Phosphorous Spill	NA	Yes	No	No	No	No	NA	Unknown
Plattco Landfill	NA	Yes	No	No	No	No	NA	Unknown
Ray County Drum Site	NA	Yes	No	No	Yes	No	NA	Private
McArthur Drive Landfill	NA	Yes	No	No	No	Monitoring under EPA order	NA	Unknown
Rosecrans Site	NA	Yes	No	No	No	No	Unknown	Unknown
Posch Foundry	No	No	No	No	Yes	No--immediate removal	NA	USEPA

Table 13
SITES ON REGISTRY

<u>Site</u>	<u>County</u>
Wheeling Disposal	Andrew
A.P. Green Refractories	Audrain
UMC - South Farm	Boone
Pigeon Hill	Buchanan
Timberline Stables	Callaway
BFI - Missouri City	Clay
Lee Chemical	Clay
Cooksey's Barrel Site	Franklin
Fulbright Landfill	Green
Murray Landfill	Green
Solid State Circuits	Green
Syntex Facility	Green
Amoco Oil Co.	Jackson
Armco, Inc.	Jackson
Conservation Chemical	Jackson
Riverfront Landfill	Jackson
International Paper Co.	Jasper
Joplin Oil Ponds	Jasper
Abrahamson Property	Jefferson
Bubbling Springs	Jefferson
Davis Property	Jefferson
Minker/Stout	Jefferson
Robbins Property	Jefferson
Portions of Romaine Creek	Jefferson
Saddle & Spur Riding Club	Jefferson
Sandcut Road	Jefferson
TSI: Mulberry Hill Road	Jefferson
Syntex Facility (Verona)	Lawrence
Erwin Farm	Lawrence
Rusha Farm	Lawrence
Shenandoah Stables	Lincoln
Neosho Spill & Tank Site	Newton
Neosho Trench & Digester	Newton
Bliss Farm Road	Phelps
Portions of Piazza Road	Phelps
Jones Truck Lines	St. Louis City
ACF Site	St. Louis
Baxter Gardens Center	St. Louis
Bliss Property of Ellisville	St. Louis
Chevron Chemical Co.	St. Louis
Hardt Road	St. Louis
Manchester Methodist Church	St. Louis
Private Drive Off Hwy. 100	St. Louis
Rosalie Property	St. Louis
Santag Road Swim Club & Fire Station	St. Louis
Southern Cross Lumber	St. Louis
Times Beach	St. Louis
Westlake Landfill	St. Louis
Branson Quarry	Taney

Source: Dept. of Natural Resources; Waste Management Program

Table 14

MISSOURI SITES ON THE NATIONAL PRIORITIES LIST

Syntex Verona
 Fullbright Landfill¹
 Times Beach¹
 Minker/Stout/Romaine Creek (Abramson Property, Davis Residence)¹
 Ellisville Sites (Bliss Property, Ellisville Neighbors, Rosalie,
 Callahan)¹
 Shenandoah Stables¹

MISSOURI SITES PROPOSED FOR THE
NATIONAL PRIORITIES LIST

Weldon Quarry
 Lee Chemical¹
 Quality Platting
 Findelt Corporation
 Solid State Circuits¹
 Lake City Army Ammunition Plant
 North U Drive
 Bee Cee Manufacturing
 Quail Run Manor²

Source: Annual Report of Confirmed Abandoned or Uncontrolled
 Hazardous Waste Disposal Sites in Missouri; Dept. of Natural
 Resources; Waste Management Program

¹On Missouri Registry

²Proposed for Missouri Registry

Table 15 .

SITES CLEANED UP SINCE PASSAGE OF STATE SUPERFUND LAW

Site	Lead	Funding Party
Division of Parks' Warehouse	MDNR	MDNR
Hudson Site	MDNR	Meremec Industries, Inc.
Fire Trail 11-H	MDNR	MDNR
Lawrence Property	MDNR	Meremec Industries
Market St. Apartments	MDNR	MDNR
Parkhurst Mfg.	MDNR	Parkhurst Mfg., Inc.
Wheeler Property	MDNR	Pettis Co./Mary Wheeler
Defiance Site	MDNR	Mr. & Mrs. R. Silberman
Kramer Site	MDNR	Mr. Kramer
Todd Site	MDNR	Anheuser-Busch Co.
ACF Site	MDNR	ACF Inc.
Branson Quarry	MDNR	J.E. Payne Oil Co.
Mexico Feed & Seed	USEPA	USEPA
Posch Foundry	USEPA	USEPA
Cashel Residence	USEPA	USEPA
Sullins Residence	USEPA	USEPA
Victor Products	USEPA	USEPA
U.S. Polymer Site	USEPA	U.S. Polymer, Inc.
Stewart Sanitary Supply	USEPA	USEPA
Saline Creek Site	USEPA	Inmont Corp.
Ray County	MDNR	Lee Chemical
Erwin Farm	USEPA	USEPA
Ruscha Farm	USEPA	USEPA
Denny Farm	USEPA	USEPA
Ray Farm	USEPA	USEPA
Monsanto (Queeny Site)	USEPA	Monsanto
Callahan	MDNR	Private
TSI Mulberry	MDNR	Private

Source: Department of Natural Resources, Waste Management Program; U.S. Environmental Protection Agency, Kansas City Regional Office.

Table 16
SITES WITH CLEANUP COMMITMENT SINCE PASSAGE OF SUPERFUND LAW

Site	Lead	Funding Party
Solid State Circuits Site	MDNR	MDNR/USEPA
Syntex (Springfield)	MDNR	Syntex, Inc.
North-U Drive Site	MDNR	MDNR/USEPA
International Paper	MDNR	Intl. Paper Co.
Folk Ave. Site	MDNR	Sunnen, Inc.
Ellisville Sites	MDNR	MDNR/USEPA
Latty Ave. Site	USDOE	USDOE
Slaps Site	USDOE	USDOE
Quail Run Site	USEPA	USEPA
Minker Site	USEPA	USEPA
Stout Site	USEPA	USEPA
Romaine Creek	USEPA	USEPA
Talley Farm	USEPA	USEPA
Castlewood	USEPA	USEPA
Bliss (Frontenac) Site	USEPA	USEPA

Source: Department of Natural Resources; Waste Management Program.

Table 17
HAZARDOUS WASTE SITES BY COUNTY

Andrew	Wheeling Disposal ⁴
Audrain	A.P. Green Refractories ⁴ Mexico Feed & Seed ¹
Barry	Denny Farm (Dioxin) ¹
Boone	University of Missouri - South Farm ⁴
Buchanan	Union Carbide (Dioxin) ⁴ Pigeon Hill Landfill ⁴ McArthur Drive Landfill ⁵ Rosencrans Site ⁵
Callaway	Timberline Stables (Dioxin) ⁴
Camden	Division of Parks Warehouse ¹
Clay	Lee Chemical ^{3,4} BFI Missouri City ⁴
Crawford	Fire Trail ^{2,5}
Dunklin	Bee Cee Manufacturing ³
Franklin	Quail Run (Dioxin) ^{3,5} Bull Moose Tube (Dioxin) ^{5,6} Cooksey's Barrel Site ⁴ Hudson Site ¹ Lawrence ¹ Kramer ¹
Green County	Syntex - Springfield (Dioxin) ⁴ Solid State Circuit ^{3,4} Fulbright Landfill ^{2,4} Murray Landfill ⁴ Market St. Apartments ¹ Enterprise Park ⁵ North U Drive ³
Jackson	Conservation Chemical (Dioxin) ⁴ Amoco Oil Co. ⁴ Riverfront Landfill ⁴ Armco ⁴ Lake City Army ^{3,5} Posch Foundry ¹
Jasper	International Paper ⁴ Joplin Oil Ponds ⁴

Table 17
(continued)

Jefferson	Minker/Stout (Dioxin) ^{2,4} Portions of Romaine Creek (Dioxin) ^{2,4} Bubbling Springs Stables (Dioxin) ⁴ Saddle & Spur Stables (Dioxin) ⁴ Abrahamson Property (Dioxin) ^{2,4} Davis Residence (Dioxin) ^{2,4} Sandcut Road (Dioxin) ^{4,6} Sullins (Dioxin) ^{1,5} Cashel (Dioxin) ^{1,5} Robbins Property ⁴ TSI Mulberry Hill Road ^{1,4} Saline Creek Site ¹
Laclede	Lebanon Phosphorous Spill ⁵
Lawrence	Syntex - Verona (Dioxin) ^{2,4} Erwin Farm (Dioxin) ^{1,4} Rusha Farm (Dioxin) ^{1,4} Tally Farm (Dioxin) Balwin Park (Dioxin) Ray Farm (Dioxin) ¹
Lincoln	Shenandoah Stables (Dioxin) ^{2,4}
Newton	Neosho Digester and Trenches (Dioxin) ^{4,6} Neosho Waste Water School Tank and Spill ⁴
Pettis	Parkhurst Manufacturing ¹ Wheeler Property ¹
Phelps	Bliss Farm Road & Piazza Road (Dioxin) ⁴ Wall Property/Piazza Road (Dioxin) ⁴
Platte	Plattco Landfill ⁵
Ray	Ray County Drum Site ^{1,5}
St. Charles	Findelt Corp. ³ Defiance Site ¹ Weldon Spring Quarry (Radioactive) ³
St. Louis City	Jones Truck Lines (Dioxin) ^{4,6} Arkansas Best Freight (Dioxin) ⁶ Overnight (Dioxin) ^{5,6} Hammel (Dioxin) ⁵ East Texas Motor Freight (Dioxin) Bonifield Brother Truckline (Dioxin) ⁶

Table 17
(continued)

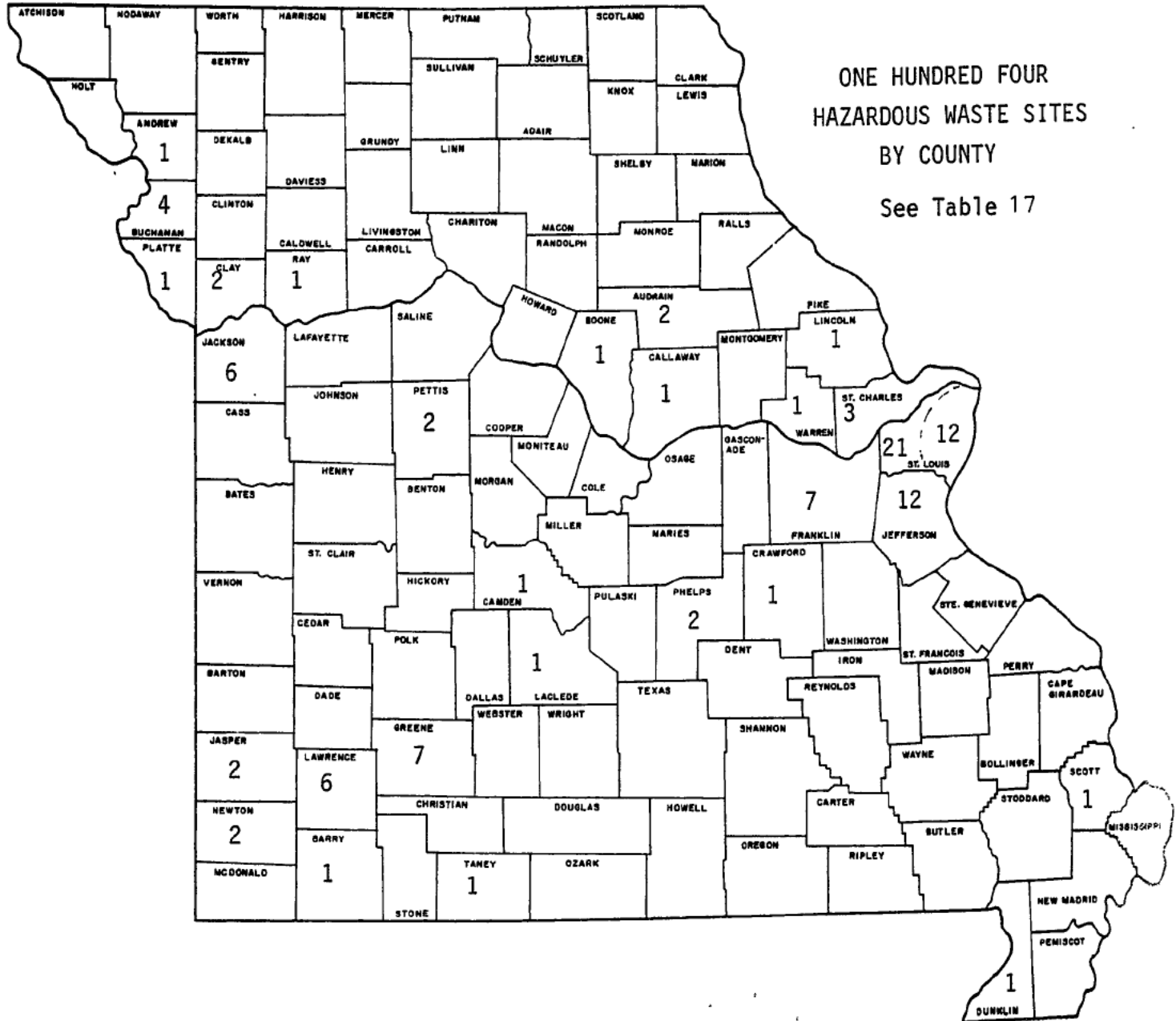
	Superior Solvents (Dioxin)
	Todd Site ^{1,5}
	U.S. Polymer ¹
	Stewart Sanitary Supply ¹
	Victor Products ¹
St. Louis County	Bliss Property at Ellisville (Dioxin) ^{2,4}
	Baxter Gardens (Dioxin) ⁴
	Santag Road Swim Club & Fire Station (Dioxin) ⁴
	Times Beach (Dioxin) ^{2,4}
	Manchester Methodist Church (Dioxin) ⁴
	Private Drive Hwy.100 ⁴
	Bliss (Frontence) Site (Dioxin) ^{5,6}
	Castlewood (Dioxin)
	Southern Cross Lumber Co. (Dioxin) ⁴
	Community Christian Church (Dioxin) ⁶
	Monsanto - Queeny Plant ⁵ (Dioxin) ^{1,5}
	East North St. (Dioxin) ^{5,6}
	Ellisville Neighbors Site (Dioxin) ^{2,5}
	Rosalie Site (Dioxin) ^{2,4}
	Callahan Site (Dioxin) ^{1,2}
	Chevron Chemical ⁴
	Folk Ave. ⁵
	Valley Park
	Westlake Landfill ⁴
	Slaps Site (Radioactive)
	Latty Ave. (Radioactive)
	ACF Site ^{1,4}
	Hardt Road Site ⁴
Scott	Quality Platting ³
Taney	Branson Quarry ^{1,4}
Warren	Zykan Site ⁵

-
- ¹Has been cleaned-up
²On National Priority List
³Proposed for National Priority List
⁴On Missouri Registry
⁵Proposed for Registry
⁶Contained or stabilized

Source: Waste Management Program

ILLUSTRATION 5

MISSOURI
STATE AND COUNTY OUTLINE



EXPENDITURES FOR CLEAN-UP OF
HAZARDOUS WASTE

Certain state and federal monies have been appropriated for the purpose of cleaning-up hazardous waste sites. The federal government has allocated money under CERCLA better known as the Superfund. This money is available to states providing a 10 percent match. Missouri has created The Hazardous Waste Remedial Fund to provide money for federal match, for identification of sites and for clean-up. General Revenue was also expended for these purposes.

Statutory Authority

RSMo 260.480 creates the Hazardous Waste Remedial Fund for the nonfederal share of expenditures for hazardous waste administrative services, health studies, acquisition of property, emergency response studies, match for federal remedial activity and reimbursement to operators who accept waste.

Written Policy

The state signs agreements with the USEPA on an individual site basis. These agreements specify what work is to be done and how it will be funded. The agreements are signed by the department director and the regional USEPA administrator.

An action memorandum is written describing activities and estimating costs for those site clean-ups which are initiated by the Waste Management Program and funded with state money. These memorandums must be signed by the director of the WMP, the director of Laboratory Services, the director of the Division of Environmental Quality, and the director of Management Services.

Priorities for clean-up appearing on the state registry are based upon the relative need for action at each site and upon the potential impact of the site on public health and the environment. The Site Assessment Committee composed of representatives from WMP, Public Drinking Water Program, Division of Geology and Land Survey, and Department of Health evaluates and recommends sites for inclusion on the registry. Sites not appearing on the registry may also receive a commitment of clean-up funds.

Methodology

The department was asked for financial information on all state expenditures for hazardous waste sites. A summary of staff time put into the clean-up of contaminated sites was also requested.

The appropriation amounts for site clean-up since 1982 were extracted from appropriation bills. The expenditures drawn from these appropriations were taken from the SAM "Cost Center Transaction Register."

Findings

- Since 1982, almost \$5.2 million in federal and state funds have been spent by Missouri on the analysis of hazardous waste sites and hazardous substances, emergency clean-up of hazardous waste, and clean-up of hazardous waste sites (Table 18). Additional money has been spent by the federal government for projects such as Times Beach.
- Since 1982, \$751,194 in federal and state funds have been spent on personnel for evaluation and clean-up of 18 individual sites (Table 19). Of this, 75 percent was spent on Times Beach activities (\$565,056).

- The second highest personnel services cost (\$65,796) was spent on the six sites storage project study which was an evaluation of placing a bunker at Times Beach to store dioxin contaminated substances. This project was never initiated due to legislative action to prevent storage of hazardous substances on a floodplain. Additionally the Minker/Stout and Ellisville sites both received approximately five percent of the staff time. More than 97 percent of the personnel services coded to individual sites were coded to dioxin sites.
- DNR has signed agreements with USEPA for the Ellisville site, Quality Platting, Solid State Circuit, North U Drive, Lee Chemical and Bee Cee Manufacturing. The latter five sites are included in one agreement for remedial investigation.
- The Hazardous Waste Remedial Fund (HWRP) will have insufficient funds to cover the costs of cleaning-up the hazardous waste sites for which the state has made preliminary commitments for clean-up. DNR estimates that the HWRP will not have sufficient funds to cover its costs in 1987 as illustrated in Table 20. DNR estimates that the HWRP will have a deficit of \$736,399 at the end of 1987. This does not take into consideration the possibility of retrieving money from responsible parties.
- The section chief of DNR Superfund projects that the five sites in the EPA agreement, all of which involve contaminated groundwater, could cost \$35 million each. A state ten percent match would be in excess of \$17 million for these five sites alone. It should be noted that some of the cost will be reimbursed by responsible parties. An Office of Technology Assessment study estimates that sites which need groundwater treatment could cost as much as \$60 million each. Only \$78,000 is planned to be spent on these

five sites through FY87 at which time DNR projects a deficit in the HWRF (Table 20).

- The law requires that DNR find private funds for clean-up whenever possible. Through the involvement of federal and state officials 15 sites have been cleaned-up using private funds. Another site clean-up was begun by private sources and turned over to DNR when it became too expensive and was subsequently turned over to USEPA because of the state expense. An additional fifteen sites are either undergoing or will begin clean-up using private funds.

RECOMMENDATIONS

- Funds to the Hazardous Waste Remedial Fund should be increased or other sources of revenue be found to meet the future needs of state supported clean-up activities. If funds continue to be limited, the state will not be able to accept federal superfund money or clean-up those sites which have no private or federal funding.
- Considering limited funding, the state needs to consider a means of setting priorities on sites to be cleaned-up.

Table 18
APPROPRIATIONS AND EXPENDITURES FOR EVALUATION AND CLEAN-UP OF
HAZARDOUS WASTE EXCLUDING OPERATING EXPENDITURES

Fiscal Year	Appropriation Number	Appropriation Amount (Dollars)	Amount Expended ² (Dollars)	Difference (Dollars)	Funding Source
Laboratory services to analyze hazardous waste sites					
FY83	7.210	NA	143,578	NA	FF
FY84	7.210	NA	NA	NA	GR/FF
FY85	7.210	57,069 ³	54,776 ³	2,293	HWRP
Contractual laboratory analysis of potentially hazardous substances					
FY82	7.330	150,000	113,210	36,790	GR
FY83	7.215	135,000	40,875	94,125	GR
FY84 (reappropriation)	14.150	62,351	13,556	48,795	GR
FY84	7.215	60,210	54,760	5,450	GR
FY85	7.215	60,210	59,686	524	HWRP/HWRP
Emergency response clean-up of hazardous waste					
FY83	7.266	100,000	92,717	7,283	GR
FY84	7.216	100,000	90,205	9,795	GR
FY85	7.216	100,000	24,746	75,254	HWRP/HWRP
Clean-up of hazardous waste sites and matching funds (HB 528)					
FY84	16.165	425,000	389,854	35,146	HWRP
FY85	7.254	1,080,171	860,746	219,425	GR/HWRP

¹NA--Not available

²Source: Senate Appropriations staff notes

²Source: Office of Administration: Cost Center Responsibility Report (22099)

²Source: Office of Administration: Cost Center Transaction Register

³Only includes money appropriated and expended from the Hazardous Waste Remedial Fund

Table 18
(continued)
APPROPRIATIONS AND EXPENDITURES FOR EVALUATION AND CLEAN-UP OF
HAZARDOUS WASTE EXCLUDING OPERATING EXPENDITURES

Fiscal Year	Appropriation Number ¹	Appropriation Amount ¹ (Dollars)	Amount Expended ² (Dollars)	Difference (Dollars)	Funding ¹ Source
Federal superfund and state match					
FY83	7.265	3,103,138	301,907	2,801,231	GR/HWF/FF
FY84 (reappropriation)	14.152	2,810,077	190	2,809,887	FF
FY84	7.255	3,288,000	88,856	3,199,144	HWF/HWRF/FF
FY85	7.255	3,288,000	14,885	3,278,533	HWF/HWRF/FF
Costs incurred to clean-up Times Beach					
FY83 (emergency)	16.156	4,500,000	503,590	3,996,410	GR
FY84 (reappropriation)	14.148	4,500,000	417,072	4,082,928	GR
FY85 (reappropriation)	14.114	3,504,368	1,929,660	1,574,708	GR
Study of an industrial waste site					
FY82	16.105	535,000	0	535,000	FF
FY83 (reappropriation)	15.320	535,000	0	535,000	FF
FY84 (reappropriation)	14.154	535,000	0	535,000	FF

¹NA--Not available

¹Source: Senate Appropriations staff notes

²Source: Office of Administration: Cost Center Responsibility Report (22099)
Office of Administration: Cost Center Transaction Register

Table 19
MISSOURI DEPARTMENT OF NATURAL RESOURCES
CONTAMINATED SITES STAFF TIME
INCEPTION THROUGH 7-31-85

SITE	MONTH BEGAN	TOTAL STAFF TIME
Bee Cee Manufacturing	01-85	143.36
Castlewood	06-84	10,570.46
Ellisville	11-82	36,116.45
Findett	10-84	30.89
Fulbright	11-84	222.74
Lake City Army Ammunition Depot	10-84	115.80
Lee Chemical	10-84	32.87
Minker/Stout	10-82	37,283.68
Minker, Stout, Cashel, Sullens	10-84	6,610.28
North U. Drive	10-84	3,414.55
Quail Run	06-84	10,314.33
Riverfront	11-84	15.03
Solid State Circuits	10-84	9,798.89
Six Sites Storage	01-84	65,795.81
Syntex-Springfield	10-84	724.15
Times Beach	12-82	565,056.92
Valley Park-St. Louis	10-84	1,710.85
Weldon Soring Quarry	01-85	3,186.99
		<u>\$751,194.05</u>
		=====

Source: Dept. of Natural Resources, Division of Management
Services

TABLE 20

DEPARTMENT OF NATURAL RESOURCES

Hazardous Waste Cleanup Costs
& Revenues
1984-1988

November 7, 1985

No GR lapse in FY 85

	1984				1985				1986				1987				Total
Appropriations/Revenues	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	
HWR	\$1,237,816	\$191,768	\$662,896	\$543,339	\$708,952	\$454,322	\$350,000	\$950,000	\$300,000	\$300,000	\$300,000	\$900,000	\$300,000	\$300,000	\$300,000	\$900,000	\$8,699,093
Less GR Lapse						(see note 1)											\$0
HWR Available (Cum.)	\$1,237,816	\$1,429,584	\$2,092,480	\$2,635,819	\$3,344,771	\$3,799,093	\$4,149,093	\$5,099,093	\$5,399,093	\$5,699,093	\$5,999,093	\$6,899,093	\$7,199,093	\$7,499,093	\$7,799,093	\$8,699,093	\$8,699,093
Projects/Commitments	\$0																
A) HB 528 Implementation		\$432,639	\$97,428	\$214,858	\$201,592	\$350,982	\$278,572	\$278,572	\$278,572	\$278,572	\$306,429	\$306,429	\$306,429	\$306,429	\$337,072	\$337,072	\$4,311,645
B) Other HWR Approps.		\$146,557	\$51,874	\$30,343	\$28,326	\$24,063	\$82,018	\$82,018	\$82,018	\$82,018	\$87,095	\$87,095	\$87,095	\$87,095	\$92,680	\$92,680	\$1,142,976
C) Projects																	
Castlewood Reloc.							\$24,000	\$24,000	\$24,000	\$24,000	\$24,000	\$24,000					\$144,000
Minkner Buyout								\$70,000									\$70,000
Valley Park							\$10,000			\$100,000							\$110,000
Robbins Prop.															\$51,000		\$51,000
Stout Sec. & Fence								\$50,000									\$50,000
Castlewood Cleanup													\$1,200,000	\$3,000	\$3,000	\$3,000	\$1,209,000
Quail Run Cleanup								\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$27,000
D.A.C.S. Cleanup								\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$27,000
Solid State Circ.										\$50,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$68,000
Ellisville Cleanup							\$50,000	\$10,000									\$60,000
Piazza Road (Rosati)											\$350,000						\$350,000
Times Beach		\$99,278	\$5,175								\$300,000				\$300,000		\$704,453
Minkner/Stout		\$12,421	\$5,336														\$17,757
Findett																\$500,000	\$500,000
See Lee									\$10,000								\$10,000
Total Projects	\$0	\$111,699	\$10,511	\$0	\$0	\$0	\$84,000	\$160,000	\$40,000	\$180,000	\$683,000	\$33,000	\$1,209,000	\$12,000	\$363,000	\$512,000	\$3,398,210
D) Div. of Health			\$9,428	\$20,282	\$22,003	\$34,472	\$29,360	\$29,360	\$29,360	\$29,360	\$29,360	\$29,360	\$29,360	\$29,360	\$29,360	\$29,360	\$379,785
E) Attorney Gen. Office							\$18,750	\$18,750	\$18,750	\$18,750	\$20,625	\$20,625	\$20,625	\$20,625	\$22,668	\$22,668	\$207,878

TABLE 20
(continued)

	1984				1985				1986				1987				
	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	Total
TOTAL COST (A+B+C+D+E)	\$0	\$690,895	\$169,241	\$265,483	\$251,921	\$409,517	\$492,700	\$568,700	\$448,700	\$588,700	\$1,126,509	\$476,509	\$1,652,509	\$455,509	\$844,799	\$993,799	\$9,435,492
CUMULATIVE TOTAL COST	\$0	\$690,895	\$860,136	\$1,125,619	\$1,377,540	\$1,787,057	\$2,279,757	\$2,848,457	\$3,297,157	\$3,885,857	\$5,012,366	\$5,488,875	\$7,141,384	\$7,596,893	\$8,441,692	\$9,435,492	\$9,435,492
REVENUE FUND BALANCE	\$1,257,816	\$738,689	\$1,232,344	\$1,510,200	1,967,231	2,012,036	1,869,336	2,250,636	2,101,936	1,813,236	986,727	1,410,218	57,709	(97,800)	(642,599)	(736,399)	(736,399)

Note 1: \$738,689 was transferred to the fund this quarter pursuant to House Bill No. 13, Section 13,070 which offset an equal amount transferred to General Revenue this quarter pursuant to Section 260,480 RSMo.

	1984				1985				1986				1987				
GR PROJECTS	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	Jan.	Apr.	Jul.	Oct.	Total
Projects/Appropriations (GR)	\$3,620,000																\$3,620,000
Times Beach Buyout	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,000,000
Times Beach Grant	\$73,380	\$57,103	\$133,927	\$26,333	\$36,604	\$67,296	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$394,643
Times Beach Plots	\$0	\$0	\$0	\$0	\$367,493	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$367,493
Total GR	\$73,380	\$57,103	\$133,927	\$26,333	\$404,097	\$67,296	\$0	\$3,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,762,136
GR BALANCE	\$3,546,620	\$3,489,517	\$3,355,590	\$3,329,257	\$2,925,160	\$2,857,864	\$2,857,864	(\$142,136)	(\$142,136)	(\$142,136)	(\$142,136)	(\$142,136)	(\$142,136)	(\$142,136)	(\$142,136)	(\$142,136)	(\$142,136)

Note: Dollar amounts historic through September 1985

Source: Dept. of Natural Resources; Division of Management Services

APPROPRIATIONS AND STAFFING

APPROPRIATIONS AND WASTE MANAGEMENT STAFFING

This section addresses the question of how funds appropriated are expended. It also looks at the personnel time devoted to waste management activities within DNR.

Statutory Authority

DNR is given authority to expend funds by the General Assembly through the appropriation process. Appropriation bills authorize dollar amounts and personnel allocation.

Written Policy

Each year DNR submits a proposed budget to the Governor which estimates expenditures by program. The proposed budget is rarely approved as a whole. The Senate Appropriations staff produces a document which identifies those budget items which have final approval.

Methodology

Three documents were used to compare expenditures and appropriations. The amount appropriated was taken from the Senate Appropriation staff notes which specify budget items. Expenditures were taken from the SAM report "Cost Center Responsibility Report". The "Chart of Accounts" was used to determine what cost centers should be examined.

In addition, DNR was requested to report on the staff hours spent on waste management activities. DNR prepared reports on waste management activities for the Regional Office Program, the Waste Management Program, laboratory and the Division of Geology and Land Survey. The Regional Office Program provided staffing plans for 1982-1986.

Findings

- Based on the department's reporting of expenditures for FY84 and FY85 to the Office of Administration, the department did not exceed its appropriation in the area of waste management as set forth in the appropriation bills passed by the General Assembly (Tables 21 & 22). This is shown in Table 22.
- In the process of evaluating the application of appropriations, it was found that the Regional Office Program's staffing plans for FY82-FY86 which allocate personnel to the regional offices does not coincide with the DNR Budget Requests for FTE to the regional offices in FY82-FY86. Table 23 illustrates these differences.
- Fourteen percent of the Waste Management Program staff's time was spent in FY84 on solid waste activities. The remainder was spent on hazardous waste. In FY85, 23 percent of the time was spent on solid waste activities. Table 24 shows time coded to solid waste activities by program.

- In FY84, 117,355.5 hours of coded personnel time was spent by DNR (WMP, ROP, Lab, DGLS) staff on waste management activities. This is equivalent to 56.42 FTE. In FY85, 129,614.5 hours were spent on waste management or the equivalent of 62.31 FTE. Table 25 shows activity by program. Additional time was probably spent on waste management activities by the support programs but reported under support activities codes.
- Appropriations for waste management activities are approved under several different sections within the appropriation bill. For example, implementation of state superfund activities is appropriated under its own section within the department's budget while implementation of the solid and hazardous waste laws is provided for in a different section which not only includes waste management but also combines the air and land programs. Regional offices, the laboratory and DGLS are all authorized to spend funds on waste activities but these amounts are not specified. Also, funds are appropriated separately for certain clean-up activities such as Times Beach. This procedure makes it difficult to actually determine how much money the state is spending in the area of waste management.

Recommendations

- To make determinations of actual dollars spent on a specific program such as waste, the appropriation bill should be restructured to designate certain amounts for specific activities in one section of the appropriation.

Table 21
 APPROPRIATIONS AND EXPENDITURES BY COST CENTER
 FOR COST CENTERS RELATING SPECIFICALLY TO WASTE MANAGEMENT
 FISCAL YEAR 1984

Appropriation Number ¹	Purpose of Appropriation	Cost Center ²	Appropriation Amount ¹ (Dollars)	Fund ²	Purpose of Cost Center ²	Expenditures ³ (Dollars)	Difference (Dollars)
7.210	Laboratory services to analyze hazardous waste sites	31707 31709 31708 31710	NA NA	GR FF GR FF	Lab Services--Waste Management--PS Lab Services--Waste Management--PS Lab Services--Waste Management--E&E Lab Services--Waste Management--E&E	31,975 54,589 2,297 15,511	NA -- NA
Total			NA			104,372	NA
7.215	Provides contractual laboratory analysis of potentially hazardous substances when such analysis is not available in the department's lab	56796	60,210	GR	Lab Contracts	54,760	5,450
Total			60,210			54,760	5,450
7.216	Provides emergency response clean-up of hazardous wastes and hazardous waste sites	56795	100,000	GR	Emergency Response Clean-up Lab Services	90,205	9,795
Total			100,000			90,205	9,795

¹Source: Senate Appropriation staff notes

²Source: Office of Administration: Chart of Accounts

³Source: Office of Administration: Cost Center Responsibility Report (22099)

Table 21 (continued)
 APPROPRIATIONS AND EXPENDITURES BY COST CENTER
 FOR COST CENTERS RELATING SPECIFICALLY TO WASTE MANAGEMENT
 FISCAL YEAR 1984

Appropriation Number ¹	Purpose of Appropriation	Cost Center ²	Appropriation Amount ¹ (Dollars)	Fund ²	Purpose of Cost Center ²	Expenditures ³ (Dollars)	Difference (Dollars)
7.240	Provides enforcement of solid and hazardous laws and regulations, provides technical assistance in the preparation of plans, reviews engineering designs of proposed facilities, and promotes resource recovery	37987 37988 50218 37989 38318 50222	182,486 285,951 98,834 44,680 34,770 <u>93,260</u>	GR FF HWF GR FF HWF	Waste Management--PS Waste Management--PS Waste Management--PS Waste Management--E&E Waste Management--E&E Waste Management--E&E	220,210 288,178 16,778 28,834 0* <u>89,490</u>	-37,724 -2,227 82,056 15,846 34,770 <u>3,770</u>
Total			739,981**			643,490**	96,491**
7.255	Enables the Division to identify, contain, store, remove, dispose hazardous wastes at abandoned sites with federal superfund grants requiring 10% match	56800 57675 56801 57676	288,000 3,000,000	HWF/ HWRP HWF/ HWRP FF FF	Laboratory Services--E&E Waste Management Program--E&E Laboratory Services--E&E Waste Management Program--E&E	0 0 61,347 <u>27,509</u>	288,000 2,911,144
Total			3,288,000			88,856	3,199,144
14.148	For all costs incurred to clean up hazardous wastes including relocation assistance at Times Beach--reappropriation	56146 56504 57677 57678 57679	4,500,000	GR	Laboratory Services DGLS Waste Management Program Division of Management Services Regional Offices	213,134 61,971 93,683 22,201 <u>26,083</u>	4,082,928
Total			4,500,000			417,072	4,082,928

* No cost center expenditure report created

** The amount shown represents only a portion of the "Air Pollution Control, Solid Waste Management, Land Reclamation and Soil and Water Conservation" Appropriation.

¹Source: Senate Appropriation staff notes

²Source: Office of Administration: Chart of Accounts

³Source: Office of Administration: Cost Center Responsibility Report (22099)

Table 21 (continued)
 APPROPRIATIONS AND EXPENDITURES BY COST CENTER
 FOR COST CENTERS RELATING SPECIFICALLY TO WASTE MANAGEMENT
 FISCAL YEAR 1984

Appropriation Number ¹	Purpose of Appropriation	Cost Center ²	Appropriation Amount ¹ (Dollars)	Fund ²	Purpose of Cost Center ²	Expenditures ³ (Dollars)	Difference (Dollars)
14.150	For the purpose of funding contracts for the analysis of hazardous waste samples--reappropriation	50198	62,351	GR	Contracts for the analysis of hazardous waste samples	13,556	48,795
Total			<u>62,351</u>			<u>13,556</u>	<u>48,795</u>
14.152	For the purpose of funding contracts to clean up hazardous waste sites--reappropriation	51581	2,810,077	FF	Contracts for clean-up	190	2,809,887
Total			<u>2,810,077</u>			<u>190</u>	<u>2,809,887</u>
14.154	Superfund--federal reappropriation	51049	535,000	FF	Clean-up operations at Industrial Waste Disposal sites	0	535,000
Total			<u>535,000</u>			<u>0</u>	<u>535,000</u>
16.165	For implementation of the Hazardous Waste Management Act	55782	140,000	HWRP	Clean-up hazardous waste-PS	140,000	0
		55783	285,000	HWRP	Clean-up hazardous waste-EE	244,854	35,146
			<u>425,000</u>			<u>389,854</u>	<u>35,146</u>

¹Source: Senate Appropriation staff notes

²Source: Office of Administration: Chart of Accounts

³Source: Office of Administration: Cost Center Responsibility Report (22099)

Table 22
 APPROPRIATIONS AND EXPENDITURES BY COST CENTER
 FOR COST CENTERS RELATING SPECIFICALLY TO WASTE MANAGEMENT
 FISCAL YEAR 1985

Appropriation Number ¹	Purpose of Appropriation	Cost Center ²	Appropriation Amount ¹ (Dollars)	Fund ²	Purpose of Cost Center ²	Expenditures ³ (Dollars)	Difference (Dollars)
7.210	Laboratory services to analyze hazardous waste sites	58947	38,520	HWRP	Laboratory Services--PS	36,339	2,181
		58948	<u>18,549</u>	HWRP	Laboratory Services E&E	<u>18,437</u>	<u>112</u>
Total			57,069			54,776	2,293
7.215	Provides contractual laboratory analysis of potentially hazardous substances	58949	45,158	HWRP	Contracts--Sample Analysis	44,662	496
		58950	<u>15,052</u>	HWF	Contracts--Sample Analysis	<u>15,024</u>	<u>28</u>
Total			60,210			59,686	524
7.216	Provides emergency response clean-up of hazardous waste	58951	75,000	HWRP	Emergency Clean-up E&E	24,522	50,478
		58952	<u>25,000</u>	HWF	Emergency Clean-up E&E	<u>224</u>	<u>24,776</u>
Total			100,000			24,746	75,254
7.240	Provides enforcement of solid and hazardous waste laws and regulations, provides technical assistance in the preparation of plans, reviews engineering designs of proposed facilities, promotes resource recovery	37987	190,432	GR	Waste Management PS	210,536	-20,104
		37988	374,989	FF	Waste Management PS	392,610	-17,621
		50218	118,719	HWF	Waste Management PS	25,621	93,098
		37989	16,830	GR	Waste Management E&E	20,086	-3,256
		37990	77,902	FF	Waste Management E&E	91,312	-13,410
		50222	<u>98,393</u>	HWF	Waste Management E&E	<u>92,495</u>	<u>5,898</u>
Total			877,265			832,660	44,605

*The amount shown represents only a portion of the "Air Pollution Control, Solid Waste Management, Land Reclamation and Soil and Water Conservation" Appropriations.

¹Source: Senate Appropriation staff notes

²Source: Office of Administration: Chart of Accounts

³Source: Office of Administration: Cost Center Responsibility Report (22099)

Table 22
(continued)
APPROPRIATIONS AND EXPENDITURES BY COST CENTER
FOR COST CENTERS RELATING SPECIFICALLY TO WASTE MANAGEMENT
FISCAL YEAR 1985

Appropriation Number ¹	Purpose of Appropriation	Cost Center ²	Appropriation Amount ¹ (Dollars)	Fund ²	Purpose of Cost Center ²	Expenditures ³ (Dollars)	Difference (Dollars)
7.254	Provides for clean-up of hazardous waste sites and matching funds	58958	30,000	GR	Implementation--Hazardous Waste Act--PS	30,000	0
		58959			DGLS--PS	63,020	
		58960			Division of Management Services--PS	56,396	
		58961			Laboratory Services--PS	143,244	
		58962	511,910	HWRF	Regional Offices--PS	0	
		58963			Waste Management Program--PS	145,602	
		58964	-----		Dioxin--PS	83,756	
Subtotal			511,910			492,018	19,892
		58965			DGLS--E&E	22,919	
		58966			Division of Management Services--E&E	16,614	
		58967			Laboratory Services--E&E	127,005	
		58968	538,261	HWRF	Regional Offices--E&E	0	
		58969			Waste Management Program--E&E	71,379	
		58970			Dioxin Health	417	
		58971			Attorney General	55,595	
		58972	-----		Dioxin	44,799	
Subtotal			538,261			338,728	199,533
Total			1,080,171			860,746	219,425

¹Source: Senate Appropriation staff notes

²Source: Office of Administration: Chart of Accounts

³Source: Office of Administration: Cost Center Responsibility Report (22099)

Table 22
(continued)
APPROPRIATIONS AND EXPENDITURES BY COST CENTER
FOR COST CENTERS RELATING SPECIFICALLY TO WASTE MANAGEMENT
FISCAL YEAR 1985

Appropriation Number ¹	Purpose of Appropriation	Cost Center ²	Appropriation Amount ¹ (Dollars)	Fund ²	Purpose of Cost Center ²	Expenditures ³ (Dollars)	Difference (Dollars)
7.255	Enables the division to identify, contain, store, remove, dispose of hazardous wastes at abandoned sites with federal superfund grants requiring 10% match	56801 } 57676 } 56800 } 57675 } 58973 } 58974 }	3,000,000 72,000 <u>216,000</u>	FF FF HWF HWF HWRP HWRP	Laboratory Service--E&E Waste Management Program--E&E Laboratory Service--E&E Waste Management Program--E&E Laboratory Services--E&E Waste Management Program--E&E	9,264 } 0* } 0 } 0* } 5,418 } 203 }	2,990,736 72,000 <u>215,797</u>
Total			3,288,000			14,885	3,278,533
14.114	Buy-out for Times Beach reappropriation	55840 } 55893 } 56146 } 56504 } 57677 } 57678 } 57679 }	3,504,368	GR	Office of Director DEO Administration Laboratory Services DGLS Waste Management Program Division of Management Services Regional Offices	135 } 778,257 } 1,025,747 } 1,030 } 41,284 } 183 } 74,024 }	1,574,708
Total			3,504,368			1,929,660	1,574,708

* No cost center expenditure report created

¹Source: Senate Appropriation staff notes

²Source: Office of Administration: Chart of Accounts

³Source: Office of Administration: Cost Center Responsibility Report (22099)

Table 23
REGIONAL OFFICE STAFF
by Staffing Plan and Appropriations

	Number of FTE's				
	FY82	FY83	FY84	FY85	FY86
Regional Office Staffing Plan	93.0	91.0	99.0	106.0	112.0
Budgeted FTE	100.0	99.0	99.0	101.5	104.5
Difference	+7	+8	0	-4.5	-7.5

Source: Senate Appropriation Notes; Regional Office Program
"Staffing Plan" for FY82-FY86.

Table 24
STAFF ACTIVITY IN THE AREA OF SOLID WASTE

Program	FY84		FY85	
	Hours	Activity Cost (Dollars)	Hours	Activity Cost (Dollars)
Waste Management Program	10,921.5	108,047	15,488.5	169,570
Laboratory Services	2,656.5	19,157	505.0	4,468
Regional Offices	13,007.0	125,054	8215.0	87,139
TOTAL	26,585.0	252,258	24,208.5	261,177
Full-time Equivalent Employee (2080 hours)	12.78		11.64	
Average Cost Per Hour (Dollars)		9.49		10.79

Source: DNR Time Reporting Activity Report.

Table 25
STAFF ACTIVITY IN WASTE MANAGEMENT

Program	FY84		FY85	
	Hours	Activity Cost (Dollars)	Hours	Activity Cost (Dollars)
Waste Management Program	68,134.0	646,869	77,375.0	825,722
Laboratory Services	8,888.0	77,585	10,642.5	100,298
Regional Offices	33,416.5	322,051	37,368.0	387,260
TOTAL	117,355.5	1,107,127	129,614.5	1,360,774
Full-time Equivalent Employee (2080 hours)	56.42		62.31	
Average Cost Per Hour (Dollars)		9.43		10.50

Source: DNR Time Reporting Activity Report.

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SOLID AND HAZARDOUS WASTE FACILITY
QUESTIONNAIRE RESULTS

=====

Methodology

Questionnaires (see Appendix D) were sent to 51 permitted waste landfills and facilities. All permitted hazardous waste facilities (10) with the exception of the EPA mobile incinerator were included in the sample. A list of solid waste facilities was taken from the September 1985 Waste Management Program Monthly Activities Reports. Every fourth private facility, county facility and city facility was taken from the list. The list had a total of 185 facilities. Twenty-two responses were received.

Findings

- The respondents represented: * Number of facilities:

Sanitary Landfills	10
Demolition Landfills	6
Special Waste Landfills	4
Transfer Stations	3
Resource Recovery Facilities	1
Storage Facilities	2

- In answering questions on permitting, the respondents felt that permit application requirements were in a form that was understandable (yes - 17; no - 1), and 73% felt DNR's handling of permit applications was satisfactory. Four of the respondents thought that DNR's handling of the process took too long.

* The numbers total more than 22 because some facilities identified themselves under more than one facility type.

- In answering questions on inspections, 40% indicated that their facilities had been inspected within the last month. Sixty percent had had their facilities inspected in the last quarter (3 months). Eight facilities had not been inspected in the last three months. Of these, one was a demolition landfill which had been inspected in the last six months. Three were hazardous waste facilities which had been inspected in the last year. Only three facilities, all of which were special waste, fall out of the parameters set by DNR for scheduling inspections.
- Facilities were asked how often they were inspected in the last two years. Eight (36%) of the respondents who should have received eight inspections in the last two years did not receive eight inspections (4 sanitary, 4 special waste).
- Eleven facilities indicated that DNR had identified a violation in their respective facilities during the last inspection. Of the 11, 64% of the respondents were informed of the violations immediately. All respondents received notices within two months.
- Eighteen respondents provided their opinions on whether or not DNR's enforcement activities were productive in respect to preventing health hazards. Eighty-nine percent responded that DNR's enforcement activities were productive.
- The facilities were also asked their opinions of state waste regulations in relation to protecting public health. Of the 15 answering the question, 11 (73%) felt the regulations were adequate and four (27%) felt they were exceptional.
- Only two facilities indicated that they received training or technical assistance from DNR. Both instances were at the request of the facilities. Both respondents felt the assistance was useful.

- Several of the respondents made comments on DNR and waste management. Three respondents complained about illegal landfills and open dumps which hurt their businesses. Two respondents felt that regulations should be changed to provide for local government planning and zoning in the placement of landfills. Two respondents were concerned about the necessity for siting and permitting new and legal landfills to "avoid a crisis that will soon be here." In the area of hazardous waste, one respondent wants a more aggressive permitting program; another wants a pollution liability fund to be funded by all generators, treatment, storage and disposal facilities; and two saw conflict between federal regulations and state regulations. One respondent wants more emphasis on resource recovery.

APPENDIX A
SANITARY LANDFILL PLAN REVIEW CHECK SHEET

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SANITARY LANDFILL
PLAN REVIEW
CHECK SHEET

Application:

Name: _____

Location: _____ 1/4, _____ 1/4, _____ 1/4,

Sec. _____ T. _____ R. _____ COUNTY

Operator: _____

Owner: _____

2.1.0. Solid Waste Accepted :

Check type of waste proposed to be accepted:

☐ Municipal solid waste

☐ Bulky waste

☐ Dead animals

☐ Incinerator residue

☐ Demolition and construction waste

☐ Brush and untreated wood waste

☐ Septic tank pumpings

☐ Wastewater treatment plant sludges

☐ Other sludges (specify) _____

☐ Liquids (specify) _____

☐ Industrial process waste (specify) _____

☐ Hazardous wastes (specify) _____

☐ Other waste (specify) _____

2.2.0 Solid Wastes Excluded:

- | | |
|--|--|
| ☐ Hazardous wastes | ☐ Industrial process sludge |
| ☐ Bulk liquids | ☐ Other toxic and hazardous materials |
| ☐ Semisolids | ☐ Radioactive materials |
| ☐ Sludges containing free moisture | ☐ Raw animal manure |
| ☐ Highly flammable or volatile substances | ☐ Septic tank pumpings |
| ☐ Unexpended pesticide containers | ☐ Raw sewage sludge |
| ☐ Pesticides | ☐ Explosives. |

Special Design Handling Procedures: _____

Provisions for posting list of wastes not approved: _____ Yes

_____ No

2.3.0 Site Selection:

Geologic and Hydrologic Conditions:

_____ Suitable _____ Non Suitable

Soil Boring Information:

_____ Adequate _____ Non-Adequate

Contour map of initial and final contours at 5 foot intervals or less:

_____ Adequate _____ Non-Adequate

Land use and zoning within 1/4 mile of site:

_____ Adequate _____ Non-Adequate

Location of all residences, buildings, wells, water courses, springs,
lakes, rock outcropping, caves, sinkholes, and soil or rock borings:

_____ Provided _____ Not Provided

Projected use of completed sanitary landfill: _____

Alterations of unacceptable geologic and/or hydrologic conditions:

Site accessibility during all-weather conditions from public roads
to working face:

_____ Adequate _____ Non-Adequate

2.4.0 Design:

Plans prepared by registered professional engineer licensed by
State of Missouri:

_____ Yes _____ No

2.5.0 Water Quality:

Current and projected use of water resources:

_____ Provided _____ Not Provided

Groundwater elevation, lowest point of the lowest cell elevation,
and predicted maximum water table elevation:

_____ Provided _____ Not Provided

Potential interrelationship between sanitary landfill, local
aquifers, and surface waters based on historical records:

_____ Provided _____ Not Provided

Background and initial quality of water resources:

_____ Provided _____ Not Provided

Location and design of observation wells, sampling stations, and testing program planned:

_____ Provided _____ Not Provided

Description of soil and bedrock to depth adequate to allow evaluation of water quality protection provided by soil and bedrock:

_____ Provided _____ Not Provided

Potential of leachate generation, and proposed control systems (i.e. collection systems, treatment systems.) Operation and maintenance program including administration and financing during and following operation:

_____ Provided _____ Not Provided

Protection against 100-year flood by dikes. Evaluation of flood flow restriction:

_____ Provided _____ Not Provided

Surface water control devices:

_____ Adequate _____ Non-Adequate

2.6.0 Air Quality:

Dust control provisions:

_____ Adequate _____ Non-Adequate

No open burning:

_____ Yes _____ No

2.7.0 Gas Control:

Gas vents:

_____	Necessary	_____	Not Necessary
_____	Adequate	_____	Non-Adequate

2.8.0 Vectors:

Provisions for Vector Control:

_____	Provided	_____	Not Provided
_____	Adequate	_____	Non-Adequate

2.9.0 Aesthetics:

Litter control provisions:

_____	Adequate	_____	Not Adequate
-------	----------	-------	--------------

2.10.0 Cover Material:

Cover material sources, quantities, and soil classifications:

_____	Provided	_____	Not Provided
-------	----------	-------	--------------

Surface grades and side slopes designed to promote maximum runoff
without excessive erosion to minimize infiltration:

_____	Adequate	_____	Non-Adequate
-------	----------	-------	--------------

Final side slopes exceeding 33 1/3 percent:

_____	Yes	_____	No
-------	-----	-------	----

Procedures to promote vegetative growth, combat erosion and
improve appearance of idle and completed areas:

_____	Provided	_____	Not Provided
-------	----------	-------	--------------

Procedures to maintain cover material integrity, e.g. regrading
and recovering:

_____	Provided	_____	Not Provided
-------	----------	-------	--------------

Provisions for daily cover, intermediate cover, and final cover:

_____ Provided _____ Not Provided

2.11.0 Compaction:

Arrangements for substitute equipment:

_____ Adequate _____ Non-Adequate

Equipment Provided:

_____ Adequate _____ Non-Adequate

Provisions for spreading and compacting in two-foot layers,
compacting to smallest practical volume, placing, spreading,
and compacting cover material:

_____ Adequate _____ Non-Adequate

Preventive maintenance program:

_____ Provided _____ Not Provided

Operation manual describing various daily tasks:

_____ Provided _____ Not Provided

2.12.1 Safety:

Controlled access:

_____ Adequate _____ Not Adequate

Dust control for traffic safety purposes:

_____ Provided _____ Not Provided

Fire control provisions:

_____ Adequate _____ Non-Adequate

Communications:

_____ Provided _____ Not-Provided

_____ Adequate _____ Non-Adequate

Scavenging Prohibited:

_____ Yes _____ No

2.13.0 Records:

Provisions in plans for maintaining sufficient records:

_____	Provided	_____	Not Provided
_____	Adequate	_____	Non-Adequate

Minimum records:

Major operational problems, complaints, or difficulties:

_____	Yes	_____	No
-------	-----	-------	----

When applicable, leachate, gas, ground and surface water monitoring:

_____	Yes	_____	No
-------	-----	-------	----

Vector control efforts:

_____	Yes	_____	No
-------	-----	-------	----

Dust and litter control efforts:

_____	Yes	_____	No
-------	-----	-------	----

Provisions for annual topography survey or scales for quantitative measurement of solid waste handled:

_____	Yes	_____	No
-------	-----	-------	----

Provision for filing surveyors plat:

_____	Yes	_____	No
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APPENDIX B
OVERSIGHT--HAZARDOUS WASTE PERMIT CHECKLIST

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OVERSIGHT--HAZARDOUS WASTE PERMIT CHECKLIST

Permit Review Items

Activity that requires a permit

Latitude and longitude of the facility

Existing facilities--a scale drawing of facility showing location of all past, present, and future TSD areas

Existing facilities--photographs of facility

Description of the process for treating, storing or disposing of hazardous waste including design capacity

SIC codes--up to four

Hazardous waste to be treated

Listing of all environmental permits applied for by the facility

Topographical map

Drawing depicting

- a) Original contours
- b) Proposed final contours
- c) Original surface water drainage
- d) Proposed final surface water drainage patterns

Layout of the leachate collection system

Layout of the monitoring system

Access roads

Location of soil borings and trenches

Major rock outcrops and sinkholes within the map area

Occupied permanent residential dwelling houses within 1/4 mile of the site

Available information on wells water supply lines, sinkhole caves, or mining areas within 1/4 mile of site

Engineering plans for new facilities

Chemical and Physical Analysis of Hazardous Waste to be Handled by the Facility

OVERSIGHT--HAZARDOUS WASTE PERMIT CHECKLIST
(continued)

Permit Review Items

Copy of the Waste Analysis Plan

Description of the Security Procedures and Equipment Required

A Copy of the General Inspection Schedule

A Copy of the Contingency Plan Required by Section 5 of this Rule

Preventative Procedures

A description of the procedures, structures, or equipment to prevent:

- a) Hazards in unloading
- b) Runoff from hazardous waste handling areas or flooding
- c) Run-on to active areas
- d) Contamination of water supplies
- e) Mitigate effects of equipment failure
- f) Prevent undue exposure of personnel to hazardous waste

Description of Precautions to Prevent Accidental Ignition

Traffic Pattern Load Bearing Capacity

Location information

- a) Seismic considerations
- b) Flooding considerations

Groundwater monitoring

Fee--\$500 or \$1000

Names of property owners adjoining facility

List of senators and representatives in areas and highest elected local officials

APPENDIX C
LOCAL GOVERNMENT QUESTIONNAIRE

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FRANK M. MASTERS
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September 30, 1985

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MARVIN E. PROFFER
ROBERT ELLIS YOUNG

!address!

Dear !name!:

The Oversight Division of the Missouri General Assembly is conducting a performance audit of the Missouri Department of Natural Resources (DNR) Waste Management Program.

As a part of the audit, we are sending questionnaires to local governments to analyze local waste management planning efforts and the relationship between local governments and DNR.

The survey contains questions on planning, technical assistance and training, resource recovery, public participation, the permit process, state law, enforcement procedures, groundwater monitoring and hazardous waste sites. Please direct this questionnaire to the appropriate people within your government operation.

We would appreciate your completing the questionnaire and returning it to us by November 1, 1985. A stamped self-addressed envelope is enclosed.

If you need additional information or have any questions, please call me at 314-751-4143. Thank you for your assistance.

Sincerely,

Natalie Tackett
Director

NT:brk

QUESTIONNAIRE TO LOCAL GOVERNMENTS

NAME --- KEY ---

DATE 11-12-85

REPRESENTING ---

TITLE ---

POPULATION ---

1. Waste management plans

Do you have a written waste management plan?

Yes 19 No 24

If not,

A. Why?

- 1) lack of staff 10
- 2) lack of funds 7
- 3) not needed 11
- 4) lack of expertise 4
- 5) other 2 explain ---

If yes,

A. Has the plan been reviewed by the Department of Natural Resources (DNR)? Yes 16 No 2
Date ---

B. Was the plan approved by DNR? Yes 15 No 2
Date ---

C. When was the plan submitted? ---

D. What was the length of time from plan submission to approval?

- | | |
|------------------------|--------------------------------|
| 1) <u>4</u> 1-2 months | 4) <u>4</u> 7-12 months |
| 2) <u>1</u> 3-4 months | 5) <u>3</u> more than one year |
| 3) <u>1</u> 5-6 months | 6) <u>---</u> 2 years or more |

D. Could you make a copy of the plan available to this office? Yes 11 No 2

E. What changes in the plan review process would you suggest?

2. Technical Assistance and Training

A. Has DNR provided your city (county) with training or technical assistance in developing a waste management plan? Yes 11 No 22

If yes,

- What form of assistance was provided?

1) written materials 5

2) workshops 5

3) grant money 3

4) personal assistance 4

5) other 2 explain _____

- Was DNR's assistance:

1) very useful 3

2) useful 1

3) not useful 2

- When was assistance provided _____

B. What would you suggest for improvement of training or technical assistance?

C. Has the city (county) requested assistance from DNR and not received it? Yes 3 No 32
Date _____

D. What kind of assistance or training is needed?

1) workshops 8

2) personal contact 7

3) grant money 9

4) written materials 6

5) none 8

E. What are the needs of the city (county) in terms of training for waste management planning?

3. Resource Recovery

A. Does the City (County) participate in any resource recovery activities as a means of waste management?

Yes 4 No 31

If yes,

- List the names and types of projects in which you are involved.
- Are resource recovery opportunities being pursued fully?
Yes 2 No 9

If no,

- Have you considered participating in any resource recovery projects? Yes 13 No 14
- If yes, why was it not pursued?
 - 1) not enough information 5
 - 2) lack of interest 4
 - 3) lack of funding 5
 - 4) economically unfeasible 8
 - 5) technically unfeasible 1
 - 6) other 1 explain _____

4. Public Participation

A. Has the City (County) participated in any waste management public hearings held by DNR? Yes 6 No 30

Date _____

If no,

- Does the City (County) receive notices? Yes 10 No 11
- Do you think the City (County) ought to participate?
Yes 17 No 6

B. Has the city (county) provided comments during any public comment periods for the siting of waste facilities?

Yes 7 No 23

Date _____

5. Permit process

- A. Do you think the process for permitting waste management facilities by the Department of Natural Resources meets the needs and concerns of local government?

Yes 17 No 11

- B. What, if any valid complaints or problems have you heard from local residents regarding the permitting of waste facilities?

- C. What role should local government play in the permitting of waste management facilities?

1) total control 4
2) directly involved in process 21
3) advisory 6
4) uninvolved 2

- D. What changes in the permitting process would you suggest.

6. State Law

- A. Do you think DNR regulations are adequate for permitting and monitoring of landfills? Yes 23 No 5

- B. Are state statutes adequate? Yes 21 No 3

- C. Do you have any suggestions for changes in regulations or statutes?

7. Enforcement Procedures

- A. Do you feel that DNR's waste management enforcement activities are productive or nonproductive with regard to the prevention of health hazards and public nuisances?

1) productive 19 2) nonproductive 4

Explain

- B. Should the number of inspections be:

1) increased 6 2) Decreased 0
3) Stay the same 15

- C. What, if any, valid complaints or problems have you heard from local residents regarding the enforcement of landfill regulations?

- D. What changes in the enforcement procedures would you suggest?

8. Groundwater Monitoring

- A. DNR monitoring of ground water near or around waste sites and facilities is:

1) Adequate 8 2) inadequate 2 3) Don't know 19

- B. How often should ground water samples be taken?

1) Never 0 2) Once a Month 5 3) Once a Year 5
4) Twice a year 5 5) Other 8

- C. Does the city (county) monitor the groundwater near or around waste sites or facilities?

Yes 8 No 16

- D. Do you have any suggestions concerning ground water monitoring?

9. Hazardous Waste Sites

A. Has DNR identified all hazardous waste sites in your area?
Yes 14 No 3

If no, what sites have not been identified?

B. For the sites that have been identified, has DNR proceeded towards clean-up in a manner which protects the health and safety of residents? Yes 14 No 1

C. Do you feel that the sites which have been cleaned-up are now safe? Yes 13 No 1

D. Which ones do you feel are still unsafe?

E. What other action(s) should DNR be taking?

F. What is your opinion of the adequacy of DNR regulations and state law with regard to contaminated sites?
adequate 17 inadequate 3

G. What changes in state law would you consider necessary to protect the health and safety of residents?

APPENDIX D
FACILITY QUESTIONNAIRE



FRANK M. MASTERS
DIRECTOR OF RESEARCH
REVISOR OF STATUTES

NATALIE TACKETT
DIRECTOR
OVERSIGHT DIVISION

STATE OF MISSOURI
COMMITTEE ON LEGISLATIVE RESEARCH
OVERSIGHT DIVISION

ROOM 132, STATE CAPITOL
JEFFERSON CITY, MISSOURI 65101
314/751-4143

September 30, 1985

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ANNETTE N. MORGAN
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MARVIN E. PROFFER
ROBERT ELLIS YOUNG

!address!

Dear !name!:

The Oversight Division of the Missouri General Assembly is conducting a performance audit of the Missouri Department of Natural Resources (DNR) Waste Management Program.

As a part of the audit, we are sending questionnaires to operators of waste facilities.

The survey contains questions on the permitting process, inspection and enforcement, state regulations, and training and technical assistance. Please direct this questionnaire to the appropriate people within your operation.

We would appreciate your completing the questionnaire and returning it to us by November 1, 1985. A stamped self-addressed envelope is enclosed.

If you need additional information or have any questions, please call me at 314-751-4143. Thank you for your assistance.

Sincerely,

Natalie Tackett
Director

NT:brk

Waste Management Facility Questionnaire

Name ---KEY--- Date 11-12-85

Representing _____ Title _____

Types of Waste handled.	Hazardous	<u>5</u>	Special	<u>11</u>
	Municipal	<u>1</u>	Industrial	<u>6</u>
	Commercial	<u>8</u>	Construction	<u>3</u>
	Other	<u>9</u>		

Type of facility	Demolition landfill	<u>6</u>	Sanitary landfill	<u>10</u>
	Transfer station	<u>3</u>	Special waste landfill	<u>4</u>
	Resource recovery	<u>1</u>	Incinerator	<u>0</u>
	Storage	<u>2</u>	Surface impoundment	<u>0</u>

1. Permit process.

- A. When did you first submit your permit application for handling waste? _____
- B. What would you consider to be a reasonable amount of time to process permits? _____
- C. Did you understand the application requirements?
 Yes 17 No 1
- D. In your opinion, is DNR's handling of permit applications
 1) satisfactory 12 2) unsatisfactory 7

Explain

2. Inspection and Enforcement.

- A. How often in the last two years has DNR inspected your facility? _____
- B. When was DNR's last inspection of your facility? _____
- | | |
|---------------------------------|----------|
| 1) within the last month | <u>8</u> |
| 2) within the last three months | <u>4</u> |
| 3) within the last six months | <u>5</u> |
| 4) within the last year | <u>3</u> |
| 5) none of the above | <u>0</u> |

Inspection and Enforcement (continued)

C. Did DNR identify any violations at that time?

Yes 11 No 9

If yes,

- How soon after the inspection were you informed of the violations?

1) immediately	<u>7</u>	2) within 2 wks	<u>2</u>
3) within 1 month	<u>1</u>	3) within 2 months	<u>1</u>
4) within 6 months	<u>0</u>	4) within 1 year	<u>0</u>

- Were you given enough information to understand the problem and to correct the problem? Yes 11 No 1
explain

- What legal or administrative actions were taken by DNR?

1) letter of warning	<u>6</u>
2) notice of violation	<u>6</u>
3) administrative order	<u>0</u>
4) legal action	<u>0</u>

- Did you receive any penalties? Yes 0 No 14

- If yes, what were they? _____

- Do you feel that DNR's waste management enforcement activities are productive or nonproductive with regard to the prevention of health hazards and public nuisances?

1) productive	<u>16</u>	2) nonproductive	<u>2</u>
---------------	-----------	------------------	----------

Explain

3. State Regulations

A. The state waste management regulations with regard to protecting the health and safety of the people of Missouri are?

1) exceptional 4 2) adequate 11 3) inadequate 0

B. What is the impact of the state waste management regulations upon your business?

C. What changes would you suggest with regard to state regulations?

4. Training and Technical Assistance

A. Has DNR provided training or technical assistance in the last year to facility staff? Yes 2 No 12

If yes,

- how would you rate the training or technical assistance?

1) very useful 1 2) useful 1
3) not useful 0

- Did the training or technical assistance meet the needs of the facility staff?

Yes No

- How was the training or technical assistance initiated?

1) request of the facility 2
2) result of inspection
3) DNR initiative
4) permit review
5) other

B. In what areas are training and technical assistance needed?

APPENDIX E
EXIT CONFERENCE



FRANK M. MASTERS
DIRECTOR OF RESEARCH
REVISOR OF STATUTES

NATALIE TACKETT
DIRECTOR
OVERSIGHT DIVISION

STATE OF MISSOURI
COMMITTEE ON LEGISLATIVE RESEARCH
OVERSIGHT DIVISION

ROOM 132, STATE CAPITOL
JEFFERSON CITY, MISSOURI 65101
314/751-4143

November 14, 1985

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MARVIN E. PROFFER
ROBERT ELLIS YOUNG

Dr. Fred A. Brunner, Director
Department of Natural Resources
1915 Southridge Plaza
Jefferson City, MO 65101

Dear Dr. Brunner:

As you know the Committee on Legislative Research, Oversight Division has been preparing a report on Department of Natural Resources, Waste Management Program. You are invited to review the final draft in Room 132 at the State Capitol, on Tuesday, November 19, 1985, at 1:00 P.M. Written comments from your agency for inclusion in the report must be turned in by Tuesday, November 26, 1985. Please feel free to bring several members of your staff if you feel other members of your staff should review the report.

The records and preparation of the final report are confidential. Please read the instructions carefully on this point.

Enclosed is a copy of the procedures the Oversight Division uses for its exit conferences. Please contact the Oversight Division if you have any questions. We are looking forward to receiving your comments for the report.

Sincerely,

Natalie Tackett

Natalie Tackett
Director

NT:bjp
Enclosures

OVERSIGHT DIVISION EXIT CONFERENCE

An "exit conference" is a meeting with officials of the audited agency and the Oversight Division. During this meeting, agency officials are allowed to read the draft report and prepare written comments which will be attached to the report prior to its release.

The statutes do not provide for a report to be a public record until signed by the Committee Chairman and issued as a report by the Legislative Research Committee. Therefore, the Oversight Division cannot release any written information except the final audit report as finalized and issued by the Legislative Research Committee. No part of the draft report may be removed from the conference room at the time of the exit conference. Agency representatives may take their own notes with them, but are requested to maintain the confidentiality of those notes until release of the audit report. The intent of this policy is to protect the agency from the premature release of information and any subsequent erroneous publicity which may occur. Persons attending the exit conference are required to maintain confidentiality with regard to records and preparation of the final report. The final report will be public.

The following steps outline the conduct of the exit conference:

1. Agency officials read the report;
2. Agency officials prepare written comments and provide any additional supporting documentation within five working days;
3. Oversight Division staff review the comments, request further documentation, and make changes if necessary;
4. The agency director is notified of any changes made in the report and may revise the agency's written comments, usually within a day or two;
5. The agency's written comments are included as an appendix to the report and should be limited to 10 pages.

APPENDIX F
ABBREVIATIONS AND ACRONYMS

ABBREVIATIONS AND ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CSR	Code of State Regulations
DEQ	Division of Environmental Quality
DGLS	Division of Geology and Land Survey
DMS	Division of Management Services
DNR	Department of Natural Resources
E & E	Expense and Equipment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FF	Federal Fund
FTE	Full-time employee
FY	Fiscal Year
GR	General Revenue
HB	House Bill
HWF	Hazardous Waste Fund
HWRF	Hazardous Waste Remedial Fund
JCRO	Jefferson City Regional Office
KCRO	Kansas City Regional Office
MCSAP	Motor Carriers Safety Assistance Program
MRO	Macon Regional Office
NA	Not applicable
NOV	Notice of Violation
NRC	National Regulatory Commission
PBRO	Poplar Bluff Regional Office
PS	Personal Services
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROP	Regional Office Program
RSMO	Revised Statutes of the State of Missouri

ABBREVIATIONS AND ACRONYMS (Continued)

SAM	Statewide Accounting Management System
SPRO	Springfield Regional Office
SRO	St. Louis Regional Office
TSD	Treatment, Storage and Disposal
US	United States
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
WMP	Waste Management Program

APPENDIX G
LETTERS FROM THE DEPARTMENT OF NATURAL RESOURCES

JOHN ASHCROFT
Governor

FREDERICK A. BRUNNER
Director



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE DIRECTOR
1915 Southridge Drive
P.O. Box 176
Jefferson City, Missouri 65102
Telephone 314-751-4422

Division of Energy
Division of Environmental Quality
Division of Geology and Land Survey
Division of Management Services
Division of Parks and
Historic Preservation

November 26, 1985

Mrs. Natalie Tackett
Director
Oversight Division
Room 132
State Capitol
Jefferson City, Missouri 65101

Dear Mrs. Tackett:

The Department of Natural Resources has reviewed the draft report of the Waste Management Program (WMP) conducted by the Legislative Oversight Division. The Department recognizes the limited time the Legislative Oversight Division had for conducting the audit. Given the limited time constraints afforded the audit team and the complexity of the Waste Management Program, the report is generally accurate and constructive. There are, however, a few misunderstandings of fact and interpretation on which this response will comment.

The Department has already initiated steps to implement many of the recommendations found in the draft audit report. Most of the remaining recommendations will be implemented by FY 1986 except in the area of solid waste planning where additional resources will be required to implement the recommendations outlined.

The draft audit report concentrated on solid waste management activities, which are not eligible for federal funding, and which have been chronically underfunded for several years. The additional resources provided for solid waste management activities in the 1985 session of the General Assembly will enable the Department to implement many of the recommendations in solid waste permitting and enforcement. The Department will be requesting for FY 87 additional resources in the areas of technical and planning assistance to local government for the review of local government solid waste management plans. Also additional staff is needed for groundwater sampling and analysis and

Mrs. Tackett
Page 2
November 26, 1985

for increased frequency of inspections. Some major ongoing activities which will impact solid waste management are:

1. Revised permitting regulations are being proposed by DNR in December, 1985.
2. The Department's permitting operations are being standardized and streamlined based on recently completed in-house review.
3. DNR requested in November, 1985 that over 500 local governments submit or update their solid waste management plans by February 28, 1986.
4. The guidelines for developing and implementing local solid waste management plans have been revised and sent to those same local governments on November 26, 1985.
5. The Department is requesting further state resources to implement the Missouri Solid Waste Management Law.

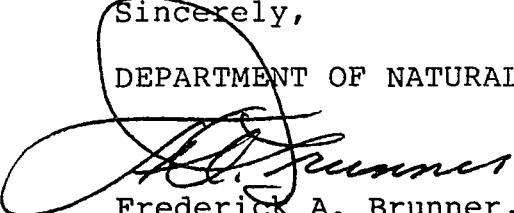
As the report indicates, future problems will develop in the state's Hazardous Waste Remedial Fund unless additional revenue sources are authorized by FY 1988.

Since the Department did not receive a copy of the audit report, the order of the responses may not correspond to the order of the audit findings. Therefore, the Department expects the Oversight Division to relate the pertinent responses to the corresponding audit findings.

The Department looks forward to working with the Oversight Division and the General Assembly in order to implement a better Waste Management Program in Missouri. Please include this letter as part of our Draft Report response.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES



Frederick A. Brunner, Ph.D. P.E.
Director

FAB:rjk

Attachment

JOHN ASHCROFT
Governor

FREDERICK A. BRUNNER
Director



STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

1915 Southridge Drive
P.O. Box 176
Jefferson City, MO 65102
314-751-4422

Division of Energy
Division of Environmental Quality
Division of Geology and Land Survey
Division of Management Services
Division of Parks and
Historic Preservation

December 12, 1985

Ms. Natalie Tackett
Director, Oversight Division
State Capitol, Room 131
Jefferson City, MO 65101

Dear Ms. Tackett:

After reviewing the performance audit report on the Waste Management Program in the form upon which the Legislative Research Committee will vote, I find I have some further comments.

Upon entering the department in May of this year I immediately identified as problems many of the findings you have included in your audit report. Within the first two months I developed and am in the process of implementing a four point plan of action designed to modernize waste management in Missouri and make the Waste Management Program more responsive to the public and landfill operators. This program includes a more efficient permitting process, the establishment of an internal task force to help communities develop resource recovery facilities, the requirement that cities and counties identify and address their problems through solid waste management plans and upgrading the archaic solid waste regulations to include financial protection for the state and application of new technology. I will continue to identify problems and seek internal solutions and feel your audit has helped in that regard.

I have, however, also identified some areas which would be easier to address if the solid waste management statutes were clarified. For instance, a strong, positive statement for resource recovery and recycling needs to be added to the law. All state agencies need to be made to realize that the Legislature is serious about exploring waste-to-energy projects and recycling. If the General Assembly wishes to require the department to pursue solid waste options in addition to landfills, legislators should convey this message in statute.

Ms. Natalie Tackett
December 12, 1985
Page -2-

Also, we are limited in our enforcement capability not only by lack of staff but by our law. We cannot issue fines or suspend a permit. Our only recourse is to revoke a permit, which is self-defeating in many areas of the state where there are not alternative landfills to utilize.

Landfill operators should be required to attend training courses, as are wastewater and water supply operators. We might be able to decrease inspections if operators were better trained. I would require my inspectors to also attend these courses so that we would have less disagreement about what constitutes technical requirements at the landfill.

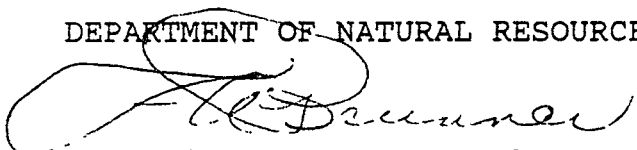
The law should also be changed to clarify who is responsible for groundwater monitoring, the operator or my department. If the department is to be responsible for collecting and analyzing quarterly samples as part of a quality assurance program we need authority to recover our costs.

My personnel in the past have spent a great deal of time correcting inadequate permit applications. I intend to make further improvements in our regulations and work with Missouri's professional engineering societies to set standards for permit applicants to follow. Once those standards are set any application which does not meet them will be considered incomplete and returned to the applicant. I also feel the Department should be given authority to recover its costs in this area.

Thank you for this further opportunity to comment. I look forward to working with you in the future.

Sincerely

DEPARTMENT OF NATURAL RESOURCES



Frederick A. Brunner, Ph.D., P.E.
Director

FAB:kj

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**OVERSIGHT DIVISION
COMMITTEE ON LEGISLATIVE RESEARCH
ROOM 132, STATE CAPITOL
JEFFERSON CITY, MISSOURI 65101
(314) 751-4143**

